Supporting Data FY 1996 / FY 1997 Biennial Budget Estimate Submitted to Congress - February 1995

DTIC ELECTE APR 2 0 1995

# DESCRIPTIVE SUMMARIES OF THE

882A-QA



This document has been approved for public release and sale; its distribution is unlimited.

# RESEARCH, DEVELOPMENT, TEST AND EVALUATION, Army Appropriation, Budget Activities 4 and 5

DEPARTMENT OF THE ARMY (FINANCIAL MANAGEMENT)

"READINESS THROUGH MODERNIZATION"

95-01260

**VOLUME II** 

DITO COMMETT DISCUSSED 6

# DESCRIPTIVE SUMMARIES FOR PROGRAM ELEMENTS OF THE

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, ARMY FY 1996/FY 1997

VOLUME II Budget Activities 4 and 5

Öist

Department of the Army

Office of the Assistant Secretary of the Army (Financial Management)

THIS PAGE INTENTIONALLY LEFT BLANK

:=

# FY 1996/1997 RDT&E, ARMY PROGRAM ELEMENT DESCRIPTIVE SUMMARIES

# INTRODUCTION AND EXPLANATION OF CONTENTS

- elements and projects. Because of new and expanded formats, this document now consists of three volumes. A brief explanation of the Development, Test and Evaluation program. The Descriptive Summaries provide narrative information on all RDT&E, A program 1. General. This section has been prepared for the purpose of providing information concerning the U.S. Army Research, new formats is provided in paragraph 6 at the end of this section.
- 2. Relationship of FY 1996 Budget Submission to the FY 1995 Budget submitted to Congress. This paragraph provides a list of program elements restructured, transitioned, or established to provide specific program identification.
- A. Program Element Restructures. Explanation for these changes can be found in the narrative sections of the Program Element R-2 Exhibits.

OLD PE/PXOJECT	TITLE	NEW PE/PROJECT
0203£02/D685	ATACMS BLKII	0604768/D688
0602601/DC05	Tractor Card	0602601/DC83
0603012/DC24	STARLOS	0603238/D546
0603238/D182	STARLOS	0603238/D546
0603322/DB93	Tractor Cage	0603322/DB92
0603322/DBB1	Tractor Cage	0603322/DB92
06030C5/D221	Non Ozone Depleting Substitutes Technology	0602601/AH82
0603730/D560	Tactical Surveillance System - Advance Development	0603766/D907

# Program Restructures (Continued)

OLD <u>PE/P/QOJECT</u>	TITLE	NEW PE/PROJECT
0604740/D662	Tactical Surveillance System - Engineering Development	0604766/D909
0604741/D126	Air Defense Tactical Operations Center	0604741/D146
0604746/DL10	Electro-Optic (EO) Test Equipment	0604746/DL59
0604746/D537	Integrated Family of Test Equipment	0604746/DL59
06048C4/DH01	Camouflage System Engineering Development	0604804/DL42
0605602/D453	Technical Test Instrumentation	0604759/D984
0605604/D089	Aircraft Certification	0605606/D092
0605801/MAC3	Ozone Depleting Chemical Elimination	0605854/M7PP
0605801/MAC4	Pollution Prevention	0605854/M8PP

Applicable portions of PE 0605856A, Environmental Compliance were restructured to new PEs for Environmental Conservation (PE 0605853A) and Pollution Prevention (PE 0605854A). Host Nation Compliance in PE 0605301A has been restructured to PE 0605856A and the new PEs, 0605853A and 0605854A. Mult ple projects within PE 0601102A, Defense Research Sciences, were restructured into new projects in PE 0601104A which has federated approach involves the creation of a distributed, multi-center external component of ARL, leveraging industry and academic been renamed University/Industry Research Centers. These projects fund the federated Army Research Laboratory (ARL). The laboratories nationally recognized for technical competence in areas essential to the Army. Portions of PE 0605702A, 0605710A and 0605604A have been restructured into new projects in PE 0605604A to provide visibility for survi /ability/lethality projects as grouped by system categories.

.≥

# Program Restructures (Continued)

Funding from twenty-four Army RDT&E Chemical/Biological Defense projects spread throughout the seven Budget Activities were transferred to the Joint Chemical Biological Defense appropriation under Office of the Secretary of Defense management based on Congressional direction. These transfers are shown in the applicable project R-2 Exhibits. B. Establishment of New Program Elements/Projects. There are no major system new starts. Minor new initiatives for FY 1996 are shown below with asterisks. The remaining programs listed are outyear initiatives beyond FY 1997.

#### TLE

Improved Cargo Helicopter *
Army Missile Defense Systems Integration*
Advance Missile System, Heavy
Kiowa Warrior CSMET *
Aviation Combat Arms Tactical Trainer (AVCATT)
Engineer Combat Arms Tactical Trainer (ENCATT)
Fire Support Combat Arms Tactical Trainer (FSCATT)
Longbow-Apache TESS *
TROJAN Development (TIARA) *

#### PE/PROJECT

0203744/D430

0604325/DE18 0604325/DE18 0604220/D538 0604780/D581 0604780/D582 0604816/DC87 0604816/DC87

C. FY 1996 Programs for which funding was shown in the FY 1995 President's Budget Submit (February 1994), but which are no longer funded.

# 3. Classified/Special Access Programs which are submitted offline through OSD are listed below.

0603018	0603019	0603020	0603238, Projects D182 and D189	0603322	0603647	0603851	0604018	0604328	0603017	
0203744, Project DB75	0203806	0203808	0301359	0602104	0602122	0602601, Project DC83	0602788	0603003, Projects DB38 and D391	0603012	0603014

UNCLASSIFIED

۲.

- 4. Program Element number 0603639A is classified SECRET and will be provided upon request.
- 5. Classification. This document no longer contains any classified data.
- Services to prepare the RDT&E Descriptive Summaries in new formats which are described below. The change in formats increased 6. New Formats. The Department of Defense Financial Management Regulation 7000.14-R, dated May 1994 required the the overall size of the publication which is now being provided in three volumes.
- to show other related appropriation funding (Paragraph C) and schedule/milestone profiles (Paragraph D). Paragraphs C and D are not Program Change Summary for the total Program Element which shows FY 1994-FY 1997 Previous President's Budget submit funding Innovation Research/Small Business Technology Transfer tax has been applied. Additional R-2 Exhibits are provided for each project and the current FY 1994-FY 1997 President's Budget Submit. Note that the FY95 Appropriated value represents the Congressionally Element. Paragraph A provides descriptions and justifications for the Program Element and for each Project; Paragraph B provides a RDT&E Budget Item Justification Sheet (R-2) provides a resource summary table for all projects and the total Program approved funding less the amounts decremented by the Congressional undistributed reductions, but before the Small Business provided if there is no other related appropriation funding and if milestone schedules do not apply.
- Major Defense Acquisition Program, funding revisions of greater than plus or minus 10 percent since the FY 1995 President's Budget B. Program Element/Project Cost Breakdown (R-3) This Exhibit is prepared for each project in Budget Activities 4, 5 or 7 Acquisition and Planning Information. The criteria for requiring that this information be provided is at least one of the following: funded in FY 1995, FY 1996 or FY 1997. Those same projects which meet certain criteria will also show Paragraph B, Budget request, major milestone schedule change of more than six months, or is a new start.

# BUDGET ACTIVITY PROGRAM ELEMENT

	PE	PROGRAM ELEMENT TITLE	PAGE
1 - BA	- BASIC RESEARCH		
_	0601101A	In-House Lab Independent Research	_
~	0601102A	Defense Research Sciences	7
~	0601104A	University/Industry Research Centers	51
12 - EX	2 - EXPLORATORY DEVELOPMENT	VELOPMENT	
❖	0602105A	Materials Technology	09
S	0602120A	Sensors & Electronic Survivability	99
9	0602211A	Aviation Technology	78
7	0602270A	EW Technology	86
<b>20</b>	0602303A	Missile Technology	96
6	0602307A	Advanced Weapons Technology	100
10	0602308A	Modeling And Simulation	102
11	0602601A	Cmbt Veh And Automotive Tech	110
12	0602618A	Ballistics Technology	118
13	0602622A	Chem, Smoke And Equip Defeating Tech	124
14	0602623A	Joint Service Small Arms Program	131
15	0602624A	Weapons & Munitions Technology	133
16	0602705A	Electronics And Electronic Devices	144
17	0602709A	Night Vision Technology	148
18	0602716A	Human Factors Engineering Technology	151
19	0602720A	Environmental Quality Tech	155

# BUDGET ACTIVITY PROGRAM ELEMENT

	PE	PROGRAM ELEMENT TITLE	PAGE
#2 - E	XPLORATORY DE	#2 - EXPLORATORY DEVELOPMENT - Continued	
20	0602782A	Command, Control And Comm Technology	16,
21	0602783A	Computer And Software Technology	173
22	0602784A	Nilitary Engineering Technology	179
23	0602785A	Manpower/Personnel/Trng Technology	189
24	0602786A	Logistics Technology	761
25	0602787A	Medical Technology	20
76	0602789A	Army Artificial Intelligence Technology	21,
#3 - A	#3 - ADVANCED DEVELOPMENT	ELOPMENT	
27	0603001A	Logistics Advanced Technology	219
28	0603002A	Medical Advanced Technology	23,
53	0603003A	Aviation Advanced Technology	249
30	0603004A	Weapons And Munitions Adv Technology	26
31	0603005A	Cmbt Vehicle And Automotive Adv Tech	27
32	0603006A	Cmd, Cntrl And Comm Adv Technology	29.
33	0603007A	Manpower, Personnel And Tng Advanced Technology	30
34	0603105A	Military HIV Research	30.
35	0603238A	Air Defense/Precision Strike Technology	30
36	0603270A	EW Technology	31,
37	0603313A	Missile And Rocket Adv Tech	32
38	0603606A	Landmine Warfare & Barrier Adv Tech	34

# BUDGET ACTIVITY PROGRAM ELEMENT

	PE	PROGRAM ELEMENT TITLE	PAGE
#3 - A	DVANCED DEVE	#3 - ADVANCED DEVELOPMENT - Continued	
39	0603607A	Joint Service Small Arms Program	350
9	0603654A	Line-Of-Sight Anti-Tank Weapon System (LOSAT)	353
41	0603710A	Night Vision Advanced Technology	356
42	0603734A	Military Engineering Adv Tech	364
43	0603759A	Chem Bio Def And Smoke Adv Tech	370
4	0603771A	Army Industrial Preparedness Mfg Tech	372
45	0603772A	Adv Tac Computer Science And Tech	379
# <b>4</b> - D	EMONSTRATION	#4 - DEMONSTRATION AND VALIDATION	
46	0603308A	Army Missile Defense Systems Integration	387
47	0603619A	Landmine Warfare & Barrier Advanced Development	391
48	0603627A	Smoke, Obscurant & Target Defeating Systems - AD	400
49	0603640A	Artillery Propellent Development	406
20	0603645A	Armored System Modernization - Adv Dev	412
51	0603649A	Engineer Mobility Equipment Advanced Development	432
52	0603653A	Advanced Tank Armament System (ATAS)	436
53	0603713A	ADDS-Army Data Distribution System	441
54	0603730A	Tactical Surveillance Sys'em - Advanced Development (TIARA)	449
55	0603745A	Tactical Electronic Support Systems - Advanced Development (TIARA)	456
99	0603747A	Soldier Support/Survivability	462
27	0603760A	Distributive Interactive Simulations - Advanced Development	477

# BUDGET ACTIVITY PROGRAM ELEMENT

	PE	PROGRAM ELEMENT TITLE	PAGE
#4 - D	EMONSTRATION	#4 - DEMONSTRATION AND VALIDATION - Continued	
58	0603766A	Tactical Exploitation of National Capabilities (TENCAP) - Advanced Development (TIARA)	480
89	0603774A	Night Vision Systems Advanced Dev	488
9	0603801A	Aviation Advanced Development	492
19	0603802A	Weapons And Munitions Advanced Dev	503
62	0603804A	Logistics And Engineer Equipment - Adv Dev	506
63	0603805A	Cmbt Svc Spt Comp Sys Eval And Anal	539
\$	0603806A	NBC Defense Systems - Advance Development	550
65	0603807A	Medical Systems Advanced Development	564
#5 - E	NGINEERING AN	#5 - ENGINEERING AND MANUFACTURING DEVELOPMENT	
99	0604201A	Aircraft Avionics	582
<i>L</i> 9	0604220A	Kiowa Warrior	587
89	0604223A	Comanche	590
69	0604270A	Electronic Warfare Development	599
70	0604315A	Tri Service Standoff Attack Missile	623
11	0604321A	All Source Analysis System (TIARA)	627
7.5	0604325A	Advanced Missile System Heavy	635
73	0604604A	Medium Tactical Vehicles	638
74	0604609A	Smoke, Obscurant & Target Defeating Systems - ED	647
75	0604611A	JAVELIN (AAWS-M)	652
76	0604619A	Landmine Warfare	656

# BUDGET ACTIVITY PROGRAM ELEMENT

	PE	PROGRAM ELEMENT TITLE	PAGE
¥5 - Eì	IGINEERING AN	15 - ENGINEERING AND MANUFACTURING DEVELOPMENT - Continued	
11	0604633A	Air Traffic Control	099
78	0604640A	Future Command And Control Vehicle (FC2V)	664
79	0604641A	Tactical Unmanned Ground Vehicle (TUGV)	699
80	0604642A	Light Tactical Wheeled Vehicles	672
81	0604645A	Armored Systems Modernization (ASM)- Engr Dev	675
82	U604649A	Engineer Mobility Equipment Development	689
83	0604710A	Night Vision Systems Engr Dev	669
84	0604713A	Combat Feeding, Clothing and Equipment	712
85	0604715A	Non-System Training Devices Engr Dev	731
98	0604716A	Terrain Information - Engineering Development (TIARA)	747
87	0604740A	Tactical Surveillance System - Engineering Development (TIARA)	752
88	0604741A	Air Def Cmd, Cntl & Intel-Engr Dev	759
89	0604746A	Automatic Test Equipment Development	769
06	0604760A	Distributive Interactive Simulations - Engineering Development	783
91	0604766A	Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	786
92	0604768A	Brilliant Anti-Armor Submunition	798
93	0604770A	Joint Surv/Tgt Attack Radar System	812
94	0604778A	Positioning System Development	820
95	0604780A	Combined Arms Tactical Trainer (CATT)	127
96	0604801A	Aviation - Engineering Development	833
26	0604802A	Weapons And Munitions Engineering Development	838
86	0604804A	Logistics And Engineer Equipment Engineering Development	856

# BUDGET ACTIVITY PROGRAM ELEMENT

	PE	PROGRAM ELEMENT TITLE	PAGE
#5 - EN	IGINEERING AN	#5 - ENGINEERING AND MANUFACTURING DEVELOPMENT - Continued	
66	0604805A	Cmd, Cntrl, Comm Systems Engr Dev	895
100	0604806A	NBC Defense Systems - Engineer Development	911
101	0604807A	Med Matl/Med Bio Def Equip Engr Dev	925
102	0604808A	Landmine Warfare/Barrier Engineering Development	943
103	0604814A	Sense And Destroy Armor Engineering Development	952
19	0604816A	Longbow - Engineering Development	096
105	0604817A	Combat Identification	978
901	0604818A	Army Tactical Command & Control System (ATCCS)-Engineering Development	786
107	0604820A	Radar Development	866
#6 - M.	#6 - MANAGEMENT SUPPORT	JPPORT	
108	0604256A	Threat Simulator Development	1005
109	0604258A	Target Systems Development	1009
110	0604759A	Major Test And Evaluation Investment	1016
111	0605103A	Rand Arroyo Center	1026
112	0605301A	Army Kwajalein Atoll	1029
113	0605601A	Army Test Ranges And Facilities	1036
114	0605602A	Army Tech Test Instr & Targets	1050
115	0605604A	Survivability/Lethality Analysis	1060
116	0605605A	DOD High Energy Laser System Test Facility	1074
117	0605606A	Aircraft Certification	1076

\*

# BUDGET ACTIVITY PROGRAM ELEMENT

	<b>P</b> E	PROGRAM ELEMENT TITLE	PAGE
₩ - W	ANAGEMENT SU	#6 - MANAGEMENT SUPPORT - Continued	
118	0605702A	Meteorological Support to RDT&E Activities	1078
119	0605706A	Materiel Systems Analysis	1084
120	0605709A	Exploitation Of Foreign Items	1090
121	0605710A	Joint NBC Test, Assessment and Survivability	1095
122	0605712A	Spt Of Operational Testing	1101
123	0605801A	Programwide Activities	1119
124	0605802A	International Cooperative Research and Development	1126
125	0605803A	Technical Info Activities	1128
126	0605805A	Munitions Stdzn Effect And Safety	1139
127	0605810A	RDT&E Support for Non-Developmental Items (NDI)	1152
128	0605 <b>853A</b>	Environmental Conservation	1157
129	0605854A	Pollution Prevention	1163
130	0605856A	Environmental Compliance - RDT&E	1167
131	0605876A	Minor Construction - (RPM) RDTE	1172
132	0605878A	Maintenance and Repair - (RPM) RDTE	1176
133	0605896A		1180
134	0605898A	Management Headquarters (Research and Development)	1186
#7 - OF	ERATIONAL SY	#7 - OPERATIONAL SYSTEM DEVELOPMENT	
135	0203726A	Advanced Field Artillery Tactical Data System (AFATDS)	1189
136	0203735A	Combat Vehicle Improvement Program	1197

# BUDGET ACTIVITY PROGRAM ELEMENT

	PE	PROGRAM ELEMENT TITLE	PAGE	GE
#7 - OF	ERATIONAL SY	#7 - OPERATIONAL SYSTEM DEVELOPMENT - Continued		
137	0203740A	Maneuver Control System (MCS)	1216	216
138	0203744A	Acft Mods/Product Improvement Progs	1228	1228
139	0203752A	Aircraft Engine Component Improvement Program	1238	1238
140	0203758A	Horizontal Battlefield Digitization	124	1244
141	0203801A	Missile/Air Defense Product Improvement Program	124	1248
142	0203802A	Other Missile Product Improvement Program		1261
143	0208010A	Joint Tactical Communications Program (TRI-TAC) D107		1277
144	0303140A	Information Systems Security		1282
145	0303142A	Satcom Ground Environment	129(	1290
146	0603778A	MLRS Product Improvement Program	1319	319

Program Element Title	P	PAGE
Air Traffic Control	0604633A	671
NBC Defense Systems - Advance Development	0603806A	559
Acft Mods/Product Improvement Progs	0203744A	1261
ADDS-Army Data Distribution System	0603713A	444
Adv Tac Computer Science And Tech	0603772A	379
Advanced Field Artillery Tactical Data System (AFATDS)	0203726A	1214
Advanced Missile System Heavy	0604325A	646
Advanced Tank Armament System (ATAS)	0603653A	438
Advanced Weapons Technology	0602307A	100
Air Def Cmd, Cntl & Intel-Engr Dev	06047415	772
Air Defense/Precision Strike Technology	0603238A	309
Aircraft Avionics	0604201A	591
Aircraft Certification	0605606A	1101
Aircraft Engine Component Improvement Program	0203752A	1271
All Source Analysis System (TIARA)	0604321A	636
Armored System Modernization - Adv Dev	0603645A	412
Armored Systems Modernization (ASM)- Engr Dev	0604645A	989
Army Artificial Intelligence Technology	0602789A	217
Army Industrial Preparedness Mfg Tech	0603771A	372
Army Kwajalein Atoll	0605301A	1052
Army Missile Defense Systems Integration	0603308A	387
Army Tactical Command & Control System (ATCCS)-Engineering Development	0604818A	1005
Army Tech Test Instr & Targets	0605602A	1073
Army Test Ranges And Facilities	0605601A	1059
Artillery Propellent Development	0603640A	406

Program Element Title	PE	PAGE
Automatic Test Equipment Development	0604746 <b>A</b>	785
Aviation - Engineering Development	0604801A	849
Aviation Advanced Development	0603801A	496
Aviation Advanced Technology	0603003A	249
Aviation Technology	0602211A	78
Ballistics Technology	0602618A	118
Base Operations - RDT&E	0605896A	1205
Brilliant Anti-Armor Submunition	0604768A	814
Chem Bio Def And Smoke Adv Tech	0603759A	370
Chem, Smoke And Equip Defeating Tech	0602622A	124
Cmbt Svc Spt Comp Sys Eval And Anal	0603805A	546
Cmht Veh And Automotive Tech	0602601A	110
Cmbt Vehicle And Automotive Adv Tech	0603005A	279
Cmd, Cntrl And Comm Adv Technology	0603006A	293
Cmd, Cntrl, Comm Systems Engr Dev	0604805A	911
Comanche	0604223A	299
Combat Feeding, Clothing and Equipment	0604713A	723
Combat Identification	0604817A	966
Combat Vehicle Improvement Program	0203735A	1225
Combined Arms Tactical Trainer (CATT)	0604780A	843
Command, Control And Comm Technology	0602782A	167
Computer And Software Technology	0602783A	173
Defense Research Sciences	0601102A	7
Distributive Interactive Simulations - Engineering Development	0604760A	799
Distributive Interactive Simulations - Advanced Development	0603760A	481

Program Element Title	PE	PAGE
DOD High Energy Laser System Test Facility	0605605A	1099
Electronic Warfare Development	0604270A	809
Electronics And Electronic Devices	0602705A	144
Engineer Mobility Equipment Advanced Development	0603649A	432
Engineer Mobility Equipment Development	0604649A	700
Environmental Compliance - RDT&E	0605856A	1192
Environmental Conservation	0605853A	1182
Environmental Quality Tech	0602720A	155
EW Technology	0603270A	317
EW Technology	0602270A	68
Exploitation Of Foreign Items	0605709A	1115
Future Command And Control Vehicle (FC2V)	0604640A	675
Horizontal Battlefield Digitization	0203758A	1277
Human Factors Engineering Technology	0602716A	151
In-House Lab Independent Research	0601101A	
Information Systems Security	0303140A	1318
International Cooperative Research and Development	0605802A	1151
JAVELIN (AAWS-M)	0604611A	663
Joint NBC Test, Assessment and Survivability	0605710A	1120
Joint Service Small Arms Program	0603607A	350
Joint Service Small Arms Program	0602623A	131
Joint Surv/Tgt Attack Radar System	0604770A	828
Joint Tactical Communications Program (TRI-TAC) D107	0208010A	1313
Kiowa Warrior	0604220A	969
Landmine Warfare	0604619A	<i>L</i> 99

Program Element Title	PE	PAGE
Landmine Warfare & Barrier Adv Tech	0603606A	345
Landmine Warfare & Barrier Advanced Development	0603619A	391
eering De	0604808A	196
Light Tactical Wheeled Vehicles	0604642A	683
Line-Of-Sight Anti-Tank Weapon System (LOSAT)	0603654A	353
Logistics Advanced Technology	0603001A	219
Logistics And Engineer Equipment - Adv Dev	0603804A	513
Logistics And Engineer Equipment Engineering Development	0604804A	872
Logistics Technology	0602786A	194
Longbow - Engineering Development	0604816A	876
Maintenance and Repair - (RPM) RDTE	0605878A	1201
Major Test And Evaluation Investment	0604759A	1039
Management Headquarters (Research and Development)	0605898A	1211
Maneuver Control System (MCS)	0203740A	1246
Manpower, Personnel And Tng Advanced Technology	0603007A	301
Manpower/Personnel/Trng Technology	0602785A	189
Materials Technology	0602105A	09
Materiel Systems Analysis	0605706A	1109
Med Matl/Med Bio Def Equip Engr Dev	0604807A	943
Medical Advanced Technology	0603002A	237
Medical Systems Advanced Development	0603807A	573
Medical Technology	0602787A	204
Medium Tactical Vehicles	0604604A	649
Meteorological Support to RDT&E Activities	0605702A	1103
Military HIV Research	0603105A	307

Program Element Title	PE	PAGE
Military Engineering Adv Tech	06037348	792
Military Engineering Technology	0602784A	100
Minor Construction - (RPM) RDTE	A4782090	1107
Missile And Rocket Adv Tech	0603313A	325
Missile Technology	0602303A	96
Missile/Air Defense Product Improvement Program	0203801A	1281
MLKS Product Improvement Program	0603778A	1359
Modeling And Simulation	0602308A	102
Munitions Stdzn Effect And Safety	0605805A	1164
NBC Defense Systems - Engineer Development	0604806A	929
Night Vision Advanced Technology	0603710A	356
Night Vision Systems Advanced Dev	0603774A	492
Night Vision Systems Engr Dev	0604710A	710
Night Vision Technology	0602709A	148
Non-System Training Devices Engr Dev	0604715A	742
Other Missile Product Improvement Program	0203802A	1297
Pollution Prevention	0605854A	1188
Positioning System Development	0604778A	836
Programwide Activities	0605801A	1144
Kadar Development	0604820A	1019
Kand Arroyo Center	0605103A	1049
KU I & E Support for Non-Developmental Items (NDI)	0605810A	1177
Satcom Ground Environment	0303142A	1326
Sense And Destroy Armor Engineering Development	0604814A	970
Sensors & Electronic Survivability	0602120A	99

چر

Program Element Title	PE	PAGE
Smoke, Obscurant & Target Defeating Systems - AD	0603627A	400
Smoke, Obscurant & Target Defeating Systems - ED	0604609A	658
Soldier Support/Survivability	0603747A	466
Spt Of Operational Testing	0605712A	1126
Survivability/Lethality Analysis	0605604A	1083
Tactical Electronic Support Systems - Advanced Development (TIARA)	0603745A	460
Tactical Exploitation of National Capabilities (TENCAP) - Advanced Development (TIARA)	0603766A	484
Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	0604766A	802
Tactical Surveillance System - Advanced Development (TIARA)	0603730A	453
Tactical Surveillance System - Engineering Development (TIARA)	0604740A	765
Tactical Unmanned Ground Vehicle (TUGV)	0604641A	089
Target Systems Development	0604258A	1032
Technical Info Activities	0605803A	1153
Terrain Information - Engineering Development (TIARA)	0604716A	758
Threat Simulator Development	0604256A	1028
Tri Service Standoff Attack Missile	0604315A	632
University/Industry Research Centers	0601104A	51
Weapons & Munitions Technology	0602624A	133
Weapons And Munitions Adv Technology	0603004A	269
Weapons And Munitions Advanced Dev	0603802A	507
Weapons And Munitions Engineering Development	0604802A	854

2983 Continuing Continuing	Continuir		2997	23962	2885	2002	2882		0	D990 Theater Missile Defense (TMD) System Integration
Total Cost	Coet to Complete	FY 2001 Estimate	FY 2000 Estimate	FY 1989 Estimate	FY 1998 Estimate	FY 1967 Estimate	FY 1996 Estimate	FY 1995 Estimate	FY 1994 Actual	COST (in Thousands)
PROJECT <b>D990</b>		ems	nse Syst	E NUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	ritle <b>Irmy Mis</b> :	PE NUMBER AND TITLE 0603308A Army Integration	PE N. 176			BUDGET ACTIVITY 4 - Demonstration And Validation
1995	February 1995	DATE Fe		oit)	-2 Exhit	IEET (R	STIFICATION SHEET (R-2 Exhibit)	TIFICA	EM JUS	RDT&E BUDGET ITEM JU

# A. Mission Description and Budget Item Justification

operational representative for theater missile defense. This program conducts systems analysis, studies, and experimentation designed to validate and integrate the pillars missile and C41 systems, as well as Aviation and Artillery. This Project focuses on efforts associated with advanced technology development used to demonstrate general Project D990 Theater Missile Defense (TMD) System Integration: Funds initiatives directed by U.S. Army Space and Strategic Defense Command in its capacity as the U.S. Army advocate, integrator, and focal point for TMD operations. USASSDC is empowered by the Department of the Army to serve as the Department level, products, required to accomplish the integrated TMD mission, exceed the scope of other programs. This program supports the milestone decisions for active defense of TMD: active defense, passive defense, attack operations, and battle management/command, control, communications, computers, and intelligence functions. This integration program produces hardware and software solutions, doctrinal and procedural solutions, interfaces, and architectures; these inter-pillar and intra-pillar military utility to include demonstration and validation in the area of TMD and is appropriately funded in Budget Activity 4.

### FY 1994 Accomplishments:

There were no projects for TMD Systems Integration funded in FY94.

## FY 1995 Planned Program:

There were no projects for TMD Systems Integration funded in FY 95.

## FY 1996 Planned Program:

- Advance development for an Army theater-level TMD command post designed to perform the battle integration function of TMD (1485)
- Participation in the Joint TMD Experiments and exercises designed to validate and test prototype products identified in the TMD ORD (500).
  - Evaluation of the interoperability of existing models and simulations (200)
    - Validation of TMD power projection requirements (200).
- Analysis of proposals to construct an Army TMD operator training facility (150).
  - Concept development for Defense Support Program TMD options (100).
    - Concept development of space applications for integrated TMD (100). Simulations and models to validate integrated TMD requirements (100)
      - Initiatives to market Army TMD developments (150).

Page 1 of 4 Pages

Exhibit R-2

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

**BUDGET ACTIVITY** 

4 - Demonstration And Validation

PE NUMBER AND TITLE

Integration

February 1995

DATE

0603308A Army Missile Defense Systems

PROJECT 0860

## FY 1997 Planned Program:

- Testing and exercising prototypical hardware and software related to integrated TMD operations, especially TMD command post/cell operations, inter-service operations, combined operations with allies, intra-pillar functions (1985).
  - to models and simulations (500). Development of enhance
- Leverage Department-level studies/initiatives to provide solutions to TMD integration issues (200).
  - Concept development of space applications for integrated TMD (100).
- Upgrades to simulations and model3 reflecting the Joint TMD environment (100).
  - Initiatives to market Army TMD developments (100).

# B. Program Change Summary

	FY 1994	EY 1995	EY 1996	<b>EY 1997</b>
Previous President's Budget	0	0	0	0
Appropriated Value	0	0	0	0
Adjustments to Appropriated Value	0	0	0	0
Current Budget Estimate Submission (BES)	0	0	2985	2985

Change Summary Explanation (by Project): N/A

Change Summary Explanation: N/A Funding: N/A

Schedule: N/A

Technical: N/A

Exhibit R-2

Item 46

388

Page 2 of 4 Pages

RDT&E BUDGET ITEM JUSTIFICATION	IFICATION SHEET (R-2 Exhibit)		DATE February 1995	1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603308A Army Integration	PENUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	1	PROJECT <b>D990</b>
C. Other Program Funding Summary. There are no other related RDTE appropriation efforts.				
EY 1994 EY 1995 E	EV 1996 EV 1997 EV	EY 1998 FY 1999 FY 2000	To EY 2001 Compl	Cost
D. <u>Schedule Profile</u> These efforts are continuous in nature; therefore, no milestone or events are provided	ided.			
FY 1994 1 2 3 4 1	FY 1995 2 3 4	FY 1996	FY 1997	4
			! !	
Pa	Page 3 of 4 Pages		Exhibit R-2	
	389			Item 46

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT COST BREAM	CDOWN (R-3)	) DATE	February 1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603308A Army Integration	TLE TMY Missile De	PENUMBER AND TITLE 0603308A Army Missile Defense Systems Integration	PROJECT D990
A. Project Cost Breakdown				
Program Management Support	EY 1994 EY 1995 0 0	FY 1996 2985 2985	EY 1997 2985 2985	
B. Budget Acquisition History and Planning Information: N/A				
			·	
	Page 4 of 4 Pages		Exhib	Exhibit R-3
	390			Item 46
	UNCLASSIFIED			

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	HS NOI	IEET (R	-2 Exhib	ift)		DATE Fet	February 1995	95
8UQ.	BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Dev	PENUMBER AND TITLE 0603619A Land Development	PENUMBER AND TITLE 0603619A Landmine Warfare & Barrier Advanced Development	Warfare	& Barrie	r Advanc	þe	
	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
	Total Program Element (PE) Cost	21148	23562	32839	17044	10004	7963	6096	11673	Continuing	Continuing Continuing
8	D005 Landmine Advanced Development	5162	0	0	0	5083	2388	2398		0 Continuing	Continuing
000	D606 Countermina/Barrier Advanced Development	15986	23662	32839	17044	7915	5755	7211	11673	11673 Continuing Continuing	Continuing

A. Mission Description and Budget Item Justification. This program element provides for advanced development of new mine and countermine systems by prototyping minefield. It provides for initiation of advanced development of the Airborne Stand-off Minefield Detection System (ASTAMIDS), the Close-in Man Portable Mine Development of minefield command and control equipment will provide new capabilities in landmine warfare and will move the future Army toward the intelligent Detector, Vehicle Mounted Mine Detector (VMMD) and for mine neutralization with Explosive Stand-off Minefield Breacher (SMB), and Anti-personnel Obstacle modern munitions technology, advanced development sensors, logic networks, fuzes, power sources, warhead components and modules into complete systems. Breaching System (APOBS)

Project D005 - Landmine Advanced Development: Program to improve the capability of mines used by U.S. Army. This project will provide command and control and on-off-on capabilities for mines.

### FY 1994 Accomplishments:

- Conducted component level tests for Wide Area Mine (WAM) Command & Control (1162)
- Set power budget & established intermine communications link for WAM Command and Control (3000)
- Developed Engineering and Manufacturing Development (EMD) plan for WAM Command & Control (1000)

FY 1995 Planned Program: Project not funded in FY 1995

FY 1996 Planned Program: Project not funded in FY 1996

FY 1997 Planned Program: Project not funded in FY 1997

Acquisition Strategy: Command and Control is being developed as a product improvement to Wide Area Mine and will be incorporated into the production design for WAM PIP

Page I of 9 Pages

Exhibit R-2

Item 47

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

4 - Demonstration And Validation

PE NUMBER AND TITLE

February 1995

DATE

0603619A Landmine Warfare & Barrier Advanced **Development** 

Explosive Stand-off Minefield Breacher (SMB), and Anti-personnel Obstacle Breaching System (APOBS). The program provides for proof-of-principle for these systems. This project provides for advanced development of new countermine systems by prototyping advanced sensors evaluation, neutralizing, clearing, breaching and detection concepts which will enhance the U.S. capability in countermine warfare. The program includes the Airborne Stand-off Minefield Detection System (ASTAMIDS), the Close-in Man Portable Mine Detector, Vehicle Mounted Mine Detector (VMMD), (U) Project D606 - Countermine/Barrier Advanced Develorment:

### FY 1994 Accomplishments:

- Completed ASTAMIDS system design and conduct review
- Initiated, developed detailed design & fabrication of ASTAMIDS prototype (7121)
- Conducted Explosive SMB Milestone I IPR and released contract solicitation (365)
- Conducted APOBS Reliability Improvement Program (1000)

### FY 1995 Planned Program:

- Conduct APOBS Milestone III IPR (200)
- Complete ASTAMIDS detail hardware design (10300)
- Continue ASTAMIDS prototype development (11575)
- ASTAMIDS test planning & site preparation (1000)
  - SBIRVSTTR (487)

## 1996 Planned Program:

- Conduct system design & preliminary design reviews for Explosive SMB (10169)
- Initiate Advanced Development design for Close-in Manportable Mine Detector (7087)
- Complete ASTAMIDS development/fabrication of prototype (11283)
- Initiate/complete development and early user tests of ASTAMIDS (4300)

## FY 1997 Planned Program:

- Complete technical test & evaluation for Explosive SMB (9052)
- Conduct Milestone II IPR for Explosive SMB (750)
- Develop Close-in Manportable Mine Detector Prototype (7242)

Acquisition Strategy: Close-in Man Portable Mine Detector - RDTE development with sole source production award to RDTE contractor.

ASTAMIDS - RDTE development with sole source production award to RDTE contractor.

SMB - RDTE development with sole source production award to RDTE contractor.

DE Breecher - RDTE development with sole source production award to RDTE contractor.

Page 2 of 9 Pages

Exhibit R-2

Item 47

392



RDT&E BUDGET ITEM JUST	JSTIFICATION SHEET (R-2 Exhibit)	SHEET (R	-2 Exhibit)	6	DATE February 1995
BUDGET ACTIVITY 4 - Demonstration And Validation		PENUMBER AND TITLE 0603619A Land Development	D TITLE Landmine V ent	PENUMBER AND TITLE 0603619A Landmine Warfare & Barrier Advanced Development	Advanced
B. Program Change Summary					
Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SBIR/STTR decrements (330)	EX 1994 21609 21609 461	EY 1995 27126 23562	<u>FY 1996</u> 15762	EY 1997 12925	
b. Reprogramming out of PE (131) Current Budget Submit/President's Budget	21148	23562	32839	17044	
	Pae	Pare 3 of 9 Pares		Ü	Exhibit R-2

393

RC* & BUDGET ITEM JUSTI	TSUC M	FICATI	ON SHE	ET (R-2	FICATION SHEET (R-2 Exhibit)			DATE	February 1995	8
RIDGET ACTIVITY			N HOL	DE NI MAGES AND TITLE	2 121				or Can y	2
4 - Demonstration And Validation			060 Dev	0603619A La Development	0603619A Landmine Warfare & Barrier Advanced Development	Warfare	& Barrie	r Advan		PROJECT D005
COST (in Thousands)	FY 1984 Actual	FY 1985 Estimate	FY 1986 Estimate	FY 1997 Estim ite	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
D005 Landmine Advanced Development	5162	0	0	0	2089	2388	2308	0	Continuing	Continuing
C. Other Program Funding Summary									] မိ	Total
RDTE, A Budget Activity 5	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	S
PE 0604808 Project D016 Mine Engring. Dev.	2912	6757	5392	5694						<del></del>
AMMO, A Appropriation E78100, Wide Area Mine			15000	20000	20000	35000	35000	35000		
D. Schedule Profile			Į	9001		Ì	>			
	FT 1994	4	· ·	FI 1995 2 3	4	FT 1990	<b>7</b>		FY 1997	4
Conduct component level tests for WAM	1		•	•		1		•	1	•
C.2 S.d. Donner Budgett and Article Sections		\$								
communications link for WAM C2		ż								
Develop EMD Plan for WAM C2		*								_
				•				1 2 2 1		
			Fage 4 of 9 Fages 394	rages				EXHIDIT K-Z	7	Item 47

RDT&E PROGRAM ELEMENT/PROJECT C	PROJECT COST BREAKDOWN (R-3)	<b>OWN (R-3)</b>		DATE February 1995	1995	
BUDGET ACTIVITY 4 - Demonstration And Validation	PENUMBER AND TITLE 0603619A Landmine Warfare & Barrier Advanced Development	Jmine Warfaı	re & Barrier	Advanced	PROJECT D005	
A. Project Cost Breakdown Primary Hardware Development Test and Evaluation Govt Engineering Spt Program Management Total  B. Budget Acquisition History and Planning Information: N/A	EY 1995	FY 1996	FY 1997			

Item 47

RDT&E BUDGET ITEM JUSTI	TSUL M	FICATI	ON SHE	ET (R-2	FICATION SHEET (R-2 Exhibit)	<b>a</b>		DATE	Fahrian 100K	40
BUDGET ACTIVITY 4 - Demonstration And Validation			PE N.	PE NUMBER AND TITLE 0603619A Land Development	PENUMBER AND TITLE 0603619A Landmine Warfare & Barrier Advanced Development	Warfare	& Barrie	r Advanc		PROJECT D606
COST (in Thousands)	FY 1994 Actual	FY 1905 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D606 Countermine/Berner Advanced Development	15000	23662	32830	17044	7915	5575	7211	11673	Continuing	Continuing
C. Other Program Funding Summary										
RDTE A Budget Activity \$	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
PE 0604808 Project D415 Mine Neutralization	0	932	1990	14735	20399	38020	20884	17958		114918
Detection OPA 3, A Appropriation M80100, Initial VMMD				6755	9942	6667				73364
S11500, ASTAMIDS  B68200 Close-in Mannostable Detection							11989	11991		23980
R68000, Standoff Hand Held Detector						3977	3977	6822		6822 7954
M/9900, Mine Countermeasures, Electronic								13672		13672
D. Schedule Profile	FY 199	•••		Y 199		FY 19%	8		FY 1997	
Complete ASTAMIDS system design and	2 X	ω <b>\$</b> 1	7 1	<b>2</b>	4	7	€ <b>4</b>	-	3	4
Initiate, develop detail design and		*								
Conduct explosive SMB milestone I IPR & Belease contract solicitation										
Conduct APOBS reliability Improvement		*								
Conduct APOBS Milestone III IPR				×						
			Page 6 of 9 Pages	Pages				Exhibit R-2	2	
										Them. 47

Item 47



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	V SHEET (R-2 Exhibit)		DATE February 1995	1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PENUMBER AND TITLE 0603619A Landmine Warfare & Barrier Advanced Development	Varfare & Barrier	Advanced	PROJECT D606
D. Schedule Profile (continued): FY 1994	FY 1995	FY 1996	FY 1997	
Continue ASTAMIDS prototype 1 2 3 4 development	X* 3 4 1	e E 7	1 2 3	4
ASTAMIDS test planning and site	×			
preparation Conduct system design & preliminary	×			
design reviews for explosive SMB Initiate advanced development design for		>		
Close-In Man Portable Mine Detector		<		
Complete ASTAMIDS		×		
development/labrication of prototype [Initiate early user tests of ASTAMIDS]		*		
Complete technical test & evaluation and		<b>(</b>		×
SMB				
Conduct final design review and initiate				×
technical/operational test & evaluation				<b>;</b>
Develop close-in Man Portable Mine				>
Detector Prototype				•
Pa	Page 7 of 9 Pages		Exhibit R-2	

RD	RDT&E PROGRAM ELEMENT/P	RAM ELE	MENT/PR	ROJECT COST BREAKDOWN (R-3)	SOST BE	<b>EAKDO</b>	WN (R-3		DATE	February 1995	1995
BUDGET ACTIVITY 4 - Demonstration And Validation	ation And Va	lidation			PE NUMBER AND TITLE 0603619A Land Development	AND TITLE  M. Landn  ment	nine Warf	PENUMBERAND TITLE 0603619A Landmine Warfare & Barrier Advanced Development	ier Advar	peou	PROJECT <b>D606</b>
A. Project Cost Breakdown	reakdown									-	
Primary Hardware Development	Development			FY 1994 11066	<b>a</b>	FY 1995 18924	EY 1996 23295	FY 1997 9892			
Test and Evaluation				45		675	2300	4050			
Govt Engineering				4151		2745	6644 448	2502			
Miscellancous - SBIR/STTR (FY 95)	BIR/STTR (FY 9)	ર		0		487	30	0			
Total				15986		23562	32839	17044			
B. Budget Acquisition History and Planning Information	ition History and	Planning Inf	ormation								
Performing Organizations	nizations										
Contractor or Government	Contract Method/Tyne	Award or	Performine	Project	Total						
Performing Activity	or Funding Vehicle	Obligation Date	Activity EAC	Office	Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to	Total
Product Development Organizations Westinghause	ent Organizations	8026	20111	20111	1420	4779		(318)	c		10%1
Raytheon	CPIF	9308	23475	23475	1520	6337	10924	4194	0		22975
130	CPIF	TBD	N/A	N/A	N/A	0	0	8377	4133		12510
TBD	CPIF	TBD	<b>Y</b>	K/X	Y/X	0	0	2362	5759		11121
Support and Management Organizations CECOM 1004	gement Organizat	ions Varions	<b>▼</b> N	<b>A</b> /N	<b>4</b> /X	4875	3676	7744	3103		19407
Test and Evaluation Organizations	n Organizations		•	•			•		7010		
TECOM	1095	Various	N/A	N/A	A/N	45	678	2300	4050		7070
Miscellancous	SBIR/STTR	(FY 95)				0	487	0	0		487
				Pag	Page 8 of 9 Pages	S			Exhibit R-3	7-3	
					398						Item 47

4

RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	EAKDO	WN (R-3		DATE F.	February 1995	96
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603619A Land Development	AND TITLE A Landr	PENUMBER AND TITLE  0603619A Landmine Warfare & Barrier Advanced  Development	ге & Вап	ier Advan	1	PROJECT <b>D606</b>
	Total Prior to EY 1994	FY 1994	EY 1995	EY 19%	FY 1997	Budget to Complete	Total Program
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	3040	11066 4875 45	18924 3476 675	23295 7244 2300	9892 3102 4050		66217 18697 7070
Subtotal Miscellaneous Total Project	3040	15986	487	32839	17044		92471
	Page 9 of 9 Pages	S			Exhibit R-3	<b>k-3</b>	

399

Item 47

#### February 1995 0603627A Smoke, Obscurant & Target Defeating DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE **BUDGET ACTIVITY**

4 - Demonstration And Validation

Systems - AD

	COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1988 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimete	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	5068	2789	3248	1999	5782	4076	0	0	Continuing	Continuing
DE78	DE78 Target Defeating Systems	-	0	0	0	0	0	0	0	0	8
DE79	DE79 Smoke, Obscurant-Advanced Development	2067	2789	3248	6567	5782	4976	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification

sought across the entire multi-spectral range from visual through infrared (IR) and millimeter wavelengths (MMW) radar for incorporation into self-protection large area range of the electromagnetic spectrum. This program element supports the Demonstration/Validation (DEMVAL) of logistically supportable, high performance smoke U. S. Forces must be able to effectively neutralize and degrade directed energy weapon systems and threat electro-optical systems/smart weapons that operate in the full and obscurant agents, munitions, and devices to improve the survivability of the combined arms force and complement combined weapons systems. Improvements are focuses on efforts associated with advance technology development used to demonstrate general military utility to include demonstration and validation in the area of and projected smoke systems. The smoke obscuration technologies supported by this program enhance smoke systems as combat multipliers. This program element Smoke, Obscurant & Equip Systems Engineering and is correctly placed in Budget Activity 4.

Project DE78 Target Defeating Systems: Project provided Demonstration/Validation (DEMVAL) of non-lethal riot control devices. Project funding was terminated in FY94 reflecting decision to concentrate on higher priority projects. Funding was transferred to other NBC programs.

#### FY 1994 Accomplishments:

No Planned Program

#### FY 1995 Planned Program:

No Planned Program

#### FY 1996 Planned Program:

No Planned Program

FY 1997 Planned Program: No Planned Program Exhibit R-2

Item 48

Page 1 of 6 Pages



# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

BUDGET ACTIVITY
4 - Demonstration And Validation

PE NUMBER AND TITLE
0603627A Smoke, Obscurant & Target Defeating
Svatems - AD

February 1995

DATE

Project DE79 Smoke, Obscurant-Advanced Development: This program funds a multi-fuel Materiel Change (MC) for the M157 Smoke Generator System (SGS) Program funding will also support the Light Vehicle Obscuration Screening System (LVOSS) project to provide an on-board screening system for the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV). The LVOSS will maximize the use of standard grenade and launcher components and technology to disseminate Systems - AD smoke/obscurant material and fully obscure the vehicle.

## FY 1994 Accomplishments:

- Conducted Pre-Production Qualification Test (PPQT) and complete M157 Smoke Generator System multi-fuel Materiel Change (2780)
  - LVOSS-Developed launcher and ammunition concepts (500)
- LVOSS-Conducted Milestone 0 IPR (87)
- LVOSS-Participated in Battle Lab Evaluation (1700)

## FY 1995 Planned Program:

- LVOSS-Conduct Milestone I/II IPR (60)
- LVOSS-Evaluate Prototype for further development (1361)
- LVOSS-Select materials and hardware for System Design (1319)
- SBIR/STTR (49)

## FY 1996 Planned Program:

- LVOSS-Complete Prototype Design Package (800)
- LVOSS-Fabricate Pre-Production Test (PPT) Hardware (1200)
  - LVOSS-Conduct PPT (1248)

## FY 1997 Planned Program:

- LVOSS-Fabricate PPQT Hardware (1800)
- LVOSS-Conduct PPQT (3000)
- LVOSS-Systems Engineering, Planning and Documentation (1767)

Page 2 of 6 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	STIFICATION	SHEET (R	1-2 Exhibit		DATE February 1995
BUDGET ACTIVITY 4 - Demonstration And Validation		PE NUMBER AND TITLE 0603627A Smo Systems - AD	4D TITLE Smoke, OI AD	bscurant & T	Smoke, Obscurant & Target Defeating AD
B. Program Change Summary	EY 1994	EY 1995	EY 19%	FY 1997	
Previous President's Budget	6039	2821	0	0	
Appropriated Value	6039	2789	0	0	
Adjustments to Appropriated Value	-971	0	0	0	
a. SBIR/STTR decrement	(86)				
o. Reprogrammed out of PE Current Budget Submit/President's Budget	(883) 8068	2789	3248	6567	
	Pag	Page 3 of 6 Pages			Exhibit R-2

402

Item 48

UNCI.ASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	NOI SH	IEET (R.	2 Exhib	<b>€</b>		DATE Fet	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NE O60 Sys	PE NUMBER AND TITLE 0603627A SMO Systems - AD	איזירב Smoke, Obscurant & Target Defeating AD	bscurant	& Targe	t Defeati		PROJECT DE79
COST (in Thousends)	FY 1904 Actual	FY 1995 Estimate	FY 1986 Estimate	FY 1897 Estimate	FY 1998 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to	Total Cost
DE79 Smoke, Obecurant-Advanced Development	5067	2769	3248	6567	29/5	4978	0	0	Continuing	Continuing
C. Other Program Funding Summary:									É	
RDTE, A Budget Activity 5 PE 0604609A Project D200 Smoke/Obscurant	FY 1994 17140	FY 1995 3703	FY 1996 2000	FY 1997 0	FY 1998 0	FY 1999 2798	FY 2000 5196	FY 2001 7482	Cont'd	Cont'd
OPA-3, A Appropriation G70700 - LVOSS M99104 - M157 Smoke Generator			5214	3614			2485	3977	4000	10462 8828
D. Schedule Profile:	FY 1994	•	т.	FY 1995	-	FY 1996	<b>,</b> , 66	-	FY 1997	
M157A1E1-Conduct PPQT M157A1E1-MS III/TC LVOSS- System Design Review LVOSS-Prototype Evaluation	·		* * *	××	. >	4	•	•	n N	•
LVOSS-Conduct PAT Hardware LVOSS-Conduct PPT LVOSS-Complete Prototype Design Pkg LVOSS-Fabrication PPQT Hardware LVOSS-Conduct PPQT LVOSS-Conduct PPQT and Documentation					<	×	××		×	××
			Pare 4 of 6 Pages	î Pages				Exhibit R-2	2	
										Item 48

403

RPTRE PROGRAM ELEMENT/PROJECT	RAM EL	EMENT/PR		COST	0000	VDOWN (R-3)		DATE F9	February 1995	96
BUDGET ACTIVITY 4 - Demonstration And Validation	lidation			PE NUMBER ALL LIFLE O603627A Smo Systems - AD	A Smokes - AD	e, Obscura	Smoke, Obscurant & Target Defeating AD	et Defeat		PROJECT DE79
A. Project Cost Breakdown;										
			FY 1994	걾	FY 1995	FY 19%	FY 1997			
Primary Hardware Development			885		504	385	385			
Development Spt Equipment Acquisition	sition		331		65	85	85			
Systems Engineering			305		205	205	205			
Integrated Logistics Support			165		8	8	8			
Quality Assurance			250		85	82	85			-
Reliability, Maintainability and Availability	ulability		58		20	75	75			
Configuration Management	•		135		98	85	175			
Technical Data			550		55	200	300			•
Development Test and Evaluation			482		250	984	2700			
Operational Test							1200			
Contractor Engineering Support			147		225	98	150			
Government Engineering Support			450		500	400	367			
Program Management			922		305	209	360			
Travel			116		55	45	. 65			
Research			254		275	300	300			
Training Development			17		20	35	55			
SBIR/STTR					49					
Total			2067		2789	3248	1989			
B. Budget Acquisition History and Planning Information:	d Planning In	formation:								
Performing Organizations			-,							
Contractor or Contract										
	Award or	Performing	Project	Total						
Performing or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Dev opment Organizations	Suc									
Misc. C/MIPR		2953	2953		2352	0	0	0	601	2953
ERDEC	Oct 93	21843	21843		2158	2515	2553	3717	10900	21843
Battelle Labs CPFF, MIPR	Feb 94	006	006		130	225	295	250	0	006
			Page	Page 5 of 6 Pages	S			Exhibit R-3	-3	
				707						Item 48
				404						

RD	RDT&E PROGRAM ELEMENT/P	RAM ELI	EMENT/PR	OJECT (	COST BE	REAKDO	ROJECT COST BREAKDOWN (R-3)		DATE F	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	ation And Val	lidation			PE NUMBER AND TITLE 0603627A Smo Systems - AD	AND TITLE 7A Smoke 8 - AD	PE NUMBER AND TITLE 0603627A Smoke, Obscurant & Target Defeating Systems - AD	ant & Tarç	jet Defea		PROJECT <b>DE79</b>
Contractor or Contract Government Method/Type Awar Performing or Funding Oblig Activity Yehicle Date Support and Management Organizations	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	EY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations Misc. TECOM MIPR	ion Organizations MIPR	<b>.</b> Oct 95	427 3700	427 3700		427	0	0 400	2600	0 0	427
Government Furnished Property: Nor	nished Property:	Nor									
Subtotal Product Development	Sevelopment		·		Total Prior to FY 1994	<u>FY 1994</u> 4640	FY 1995 2740	EY 1996 2848	EY 1997 3967	Budget to Complete 11501	Total Program 25696
Subtotal Support and Evaluation  Total Project	un management Evaluation					427 5067	2740	400 3248	2600	11501	3427 29123
				Pae	Pape 6 of 6 Papes	ઇ			Exhibit R-3	<b>?-3</b>	

RDT&E BUDGET ITEM JUST	EM JUS	<b>TIFICAT</b>	HS NOI	IEET (R	<b>FIFICATION SHEET (R-2 Exhibit)</b>	oit)		OATE FeI	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 060	E NUMBER AND TITLE 0603640A Artil	E NUMBER AND TITLE  3603640A Artillery Propellent Development	ropellen	t Develor	oment	נ	PROJECT DB91
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB91 Unicharge	30060	25588	10948	0	0	0	0	0	0	90571

propellant and is correctly placed in Budget Activity 4. For XM230, each increment is self-contained with an ignition system, wear additives, flash and blast reducers, and decoppering agent. The XM297 is a one year funded effort to develop a Unicharge-tr-sed armament system as a back-up to the AFAS Liquid Propellant armament system. A. Mission Description and Budget Item Justification. This program element is a duel faceted program, focused on efforts associated with the technology development of the XM 230 Unicharge, 155MM, Solid Propellant, Combustible Case System (XM230 Unicharge achieves zoning through the use of multiple increments), and the 52 The XM297 effort shall integrate a bolt-in, bolt-out gun mount for Paladin, laser ignition, integral mid-wall cooling gun tube, slide block breech, integral muzzle brake Caliber Solid Propellant Armament System (XM297), used to demonstrate general military utility to include demonstration and validation in the area of artillery and progressive rifling.)

## Project DB91 Artillery Propellant Development:

## FY 1994 Accomplishments:

- XM230: Insensitive munitions development, producibility maturation, computer modeling, additive and coating compatibility; XM297: Laser ignition development, design bolt-in/bolt-out gun mount, design and manufacture of second generation integral midwall cooling tube, Paladin system integration feasibility study (28262)
  - Project Management support, management engineering services, other services (1088)
- XM230: Low zone testing and loading variability testing, XM297: Complete proof and principle cannon testing, gun mount recoil test, laser ignition testing (710)

## FY 1995 Planned Program:

- XM230: Core igniter development, stand alone bottom charge development; XM297: Continued development of XM297 cannon and laser ignitur system, conduct ammunition handling and rate-of-fire/thermal management Paladin mount integration (19701)
  - Project Management support and management engineering services (870)
- Initiate cannon pre-fatigue/wear testing and continue engineering development testing, XM297; interior ballistic test and ballistic firings, XM230 (4479)
  - SIBR/STTR (538)

Page I of 6 Pages

Exhibit R-2

9

RDT&E BUDGET ITEM JUSTIFICATION	FICATION SHEET (R-2 Exhibit)	2 Exhibit)	Õ	DATE February 1995	7 1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603640A Artill	TITLE Artillery Pro	Artillery Propellent Development	nent	PROJECT DB91
<ul> <li>FY 1996 Planned Program:</li> <li>XM297: Continue development of XM297 cannon and laser ignitor systems, conduct ammunition handling rate-of-fire, thermal management demonstrations;</li> <li>(XM230): Provide Unicharge support for XM297 program (7046)</li> <li>Project management support and management engineering services (300)</li> <li>Cannon pre-fatigue/wear test completion (3600)</li> </ul>	is, conduct ammunit	tion handling ra	ic-of-fire, thermal mana	gement demonsti	ations;
B. Program Change Summary					
Previous President's Budget  Appropriated Value  SBIR & STTR Decrement  473	EY 1995 8137 25588	FY 1996	FY 1997		
in I and stronger	XXXXXX	mith monter F	¥		
Schedule: Program Will Continue development enous for Omeran ge an Technical: FY 1996 XM297 cannon program will focus on developmen	on development of solid propellant cannon only.	t cannon only.	ž		
C. Other Program Funding Summary: None					
D. Schedule Profile FY 1994	FY 1995	•	FY 1996	FY 1997	,
<del>4</del>	x* X*	<del>-</del>	<b>.</b>	<b>-</b>	<b>*</b>
Pa	Page 2 of 6 Pages		<b>)</b>	Exhibit R-2	

Properties   Pro	RDT&E BUDGET ITEM JUSTII	N N	<b>JSTIFI</b>	CATIC	S N	FICATION SHEET (R-2 Exhibit)	<b>3-2 Ex</b>	hibit)			DATE	E February 1995	199	55
2 3 4 1 3 2 3 4 1 3 2 3 4 1 3 2 3 3 4 3 3 3 4 3 3 3 4 3 3 3 4 3 3 3 4 3 3 3 4 3 3 3 4 3 3 3 4 3 3 3 4 3 3 3 4 3 3 3 3 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 4 3	BUDGET ACTIVITY  4 - Demonstration And Validation					E NUMBER A	ND TITLE	2	) aller	1		į		
2 3 4 1 2 3 3 4 1 2 3 3 4 1 3 2 3 3 4 1 3 2 3 3 4 1 3 2 3 3 4 1 3 2 3 3 4 1 3 3 4 1 3 3 3 4 1		E	1994		4	FY 1993			L	386			166	
All and Design Baseline  Milestones (XA/297)  X**  Milestones (XA/297)  X**  Milestones Cannon Design  X**  Milestones - Engineering  X**  All schooling Cannon Design  X**  X**  X**  X**  X**  All schools - Pre-Fatigue  X**  X**  X**  X**  X**  X**  X**  X	-	7	ю	4	-		4	~	7	٣	4	1 2	٣	4
Authersones (NA297)  Nidestones (NA297)  Nigestone (NA297)  Nigestone (NA297)  Nidestones (NA297)  Nidestones (NA297)  Nigestone (NA297)  Nidestones (NA297)  Nideston	Engineering Milestones	×												
Authestones (AMAS))  Authestones (Annon Test Authestones - Engineering X**  Milestones - Pre-Fatigue X**  197 Cannon Milestones - Pry-Fatigue X**  197 Cannon Milestones - Hydraulic X**  197 Cannon Milestones - Inferim Safe X*  197 Cannon Milestones - Inferim Safe X*  198 Cannon Milestones - Inferim Safe X*  199 Cannon Milestones - Inferim Safe X*  190 Cannon Mile	Tropellant Design baseline	•												
Milestones  Milestones  Adjustances  Milestones  Milestones  Adjustance - Engineering  Adjustance - Engineering  Adjustance - Engineering  Adjustance - Pre-Fatigue  ear Testing  To Cannon Milestones - Hydraulic  pre Testing  For Cannon Milestones - Interim Safe  ice Life  Page 3 of 6 Pages	Monoblock Cannon	,												
Milestones Trail Midvall Cooling Cannon Design  Wilestones Trail Midvall Cooling Cannon Design  Whitestones - Engineering  Whitestones - Pre-Fatigue Fatigue F	Test Milestones		**											
Milestones Trail Midvall Cooling Cannon Design Trail Midvall Cooling Cannon Design  Note Cannon Milestones - Pre-Fatigue Trailing	83 Round Cannon Test		<											
ral Midwall Cooling Cannon Design  Ye Cannon Milestones - Engineering X*  Sy Cannon Milestones - Pre-Fatigue X  ear Testing X  Tearnon Milestones - Interim Safe X  To Cannon	Test Milestones			×										
197 Cannon Milestones - Engineering X*  140pment Testing X  27 Cannon Milestones - Pre-Fatigue X  297 Cannon Milestones - Hydraulic X  197 Cannon Milestones - Interim Safe X  197 Cannon Milestones - Interim Safe X  198 Cannon Milestones - Interim Safe X  199 Cannon Milestones - Pre-Fatigue X  199 Cannon Milestones - Interim Safe X	Integral Midwall Cooling Cannon Design													
X X X Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Test													
X X	XM297 Cannon Milestones - Engineering	×												
X X Y Page 3 of 6 Pages	Development Testing													
X Page 3 of 6 Pages	XM297 Cannon Milestones - Pre-Fatigue					×								
X Page 3 of 6 Pages	& Wear Testing													
Page 3 of 6 Pages	XM297 Cannon Milestones - Hydraulic						×							
Page 3 of 6 Pages	Fatiene Testing													
Page 3 of 6 Pages	Xm297 Cannon Milestones - Interim Safe										, ,	×		
	Service Life										-			
	-													
					•						Ĺ			
					age	ol o rages					3	11011 K-Z		

408 SLASSIFIED



RDT	RE PROG	ZAM ELE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BR	EAKDO	WN (R-3		DATE	February 1995	96
BUDGET ACTIVITY 4 - Demonstration And Validation	ion And Vali	idation			PE NUMBER AND TITLE 0603640A Artill	AND TITLE A Artille	y Propell	PE NUMBER AND TITLE OG03640A Artillery Propellent Development		P 0	PROJECT <b>DB91</b>
A. Project Cost Breakdown	akdown										
Product Development Support and Management Test and Evaluation SBIR/STTR Total	t ment			28262 28262 1088 710 30060		FY 1995 19701 870 4479 538 25588	FY 1996 7046 300 3600 10946	FY 1997			
B. Budget Acquisition History and Planning Information	ion History and	Planning Inf	ormation								
Performing Organizations	zations										
Contractor or Government Performing	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations ARMTEC Defense SS/CPIF Products,	t Organizations SS/CPIF	Aug 92	3577	3577	856	2388	0				3244
Coachelle, CA Olin Corp, St.	뵨	Jul 94	564	564		264	300				564
Petersburg, FL Olin Corp, Marion, IL (Load,	軠	Sep 94	1269	1269		919	350				1269
Assembly & Pack) DSTI, Greenbelt, MD	莊	May 94	1265	1265		1265					1265
TBD (Ignitor material)	TBD	TBD	200	200			200				200
				Page	Page 4 of 6 Pages	S			Exhibit R-3	<b>⊱</b> 3	
					409						Item 49

RDT	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM ELE	MENT/PR	OJECT (	SOST BE	REAKDO	WN (R-3		DATE	February 1995	395
BUDGET ACTIVITY					PE NUMBER AND TITLE	AND TITLE				a	PROJECT
4 - Demonstration And Validation	tion And Val	lidation			0603640A	DA Artille	ry Propell	<b>Artillery Propellent Development</b>	opment		DB91
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Activity	or Funding	Coligation	Activity FAC	2 日 2 日 3 日 3 日 3 日 3 日 3 日 3 日 3 日 3 日	Frior to	FV 1004	EV 1004	EV 1004	EV 1007	Budget to	Total
Radford Army	FF	TBD CEL	320	38	1777	1001	350	133	F I 199/	Complete	150
Ammo Plant,		! !					•				
Radford, VA	į										,
Olin, St.	7	TBD					300				300
Petersburg, FL											
(Additive Material)											
H. Shear,	H	TBD					150				150
Torrence, CA											
United Defense	Ŧ	TBD CBT					200				200
Limited											
Partnerships,											
York, PA						2	7	5			
Curei conulacia						3	01+	3			016
(SIMP OF IES)					19294	21002	16731	7707			2002
Various activities					1000	70617	10/01	0340			60470
Radford Army		Aug 92			2474						2474
Ammun. Plant		•									
(FFP)											
Army Research					1116	1111	710				2937
Laboratory,											
11S Army Defense	2						000				Š
Ammo Cir & Sch	)						2				7
Savanna. IL											
Wright-Paterson	8						115				115
AFB, Dayton, OH											
Various Activities						13	85				86
Support and Management Organizations	ement Organizat	ions									
				Pag	Page 5 of 6 Pages	s			Exhibit R-3	k-3	



RDI	RDT&E PROGRAM ELEMENT/PROJECT	RAM EL	MENT/PR		COST BF	COST BREAKDOWN (R-3)	WN (R-3		DATE	February 1995	56
BUDGET ACTIVITY 4 - Demonstration And Validation	ition And Val	idation			PE NUMBER AND TITLE 0603640A Artill	NA Artille	TITLE Artillery Propellent Development	ent Devel			PROJECT <b>DB91</b>
Contractor or Government	Contract Method/Type	Award or	Performing	Project	Total						
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Sudget to Complete	Program
Various activities					8	1088	8/0	300			3258
Test and Evaluation Organizations	Organizations										
TECOM, Yuma, AZ						710	4029	3600			8339
AMCCOM,					147	450	450				1047
SBIR/STTR							538				538
Government Furnished Property	ished Property										
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to	FV 1994	FV 1005	·	EV 1997	Budget to	Total
											10814111
Sultotal Product Development	welcoment				Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Support and Management Subtotal Test and Evaluation	nd Management				1000	1088 710	870 4479	300			3258
SBIR/STTR Total Project					23977	30060	538 25588	10946			538 90571
				Pag	Page 6 of 6 Pages	S			Exhibit R-3	k-3	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	TION SH	IEET (R	-2 Exhib	oit)		DATE <b>Fe</b> l	February 1995	95
800G	BUDGET ACTIVITY 4 - Demonstration And Validation			PE NUN 0603 Dev	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	ITLE Armored	System N	fodemiza	ation - Ac	à	
	COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	145624	172390	201513	267885	337594	308359	44964	0	0	1729885
DB82	DB82 Systems Engineering Analysis (SEA)	841	0	0	0	0	0	0	0	0	7527
0887	DB87 Combat Vehicle Survivability	13240	15213	0	0	0	0	0	0	0	37520
0888	DB88 Future Armored Resupply Vehicle (FARV) Adv Dev	23864	21563	71054	83543	118603	122852	15987	0	0	486811

A. Mission Description and Budget Item Justification. Under PEO ASM management, the Advanced Field Artillery System (AFAS) and the Future Armored Resupply program and notification was provided to Congress on 1 Jun 92. Subsequently, on 1 Mar 94, PM-AFAS and PM-FARV transitioned to a single (06) Project Manager and development of AFAS and FARV used to demonstrate general military utility to include demonstration and validation in the area of field artillery systems and is correctly Acquisition Board to proceed into the Demonstration and Validation phase as a single program. This program element focuses on efforts associated with the technology placed in Budget Activity 4. AFAS and FARV are the Army's next generation indirect fire cannon and artillery resupply systems for the heavy force. Together, these Vehicle (FARV) were the lead PEO ASM systems. The Conventional Systems Committee and the Defense Acquisition Executive concurred in the ASM restructured incorporate advanced technologies to increase accuracy, rate of fire, survivability, mobility and ammunition handling speed, and to decrease crew size. When fielded, systems will provide an overmatching fire power capability that will support the force commander's goal of dominating the maneuver battle. AFAS and FARV will management of AFAS/FARV was transferred from PEO ASM to PEO Field Artillery Systems (FAS). On 15 Nov 94, AFAS/FARV was approved by the Defense these systems will displace the M109A6 Paladin self-propelled Howitzer and M992 Field Artillery Ammunition Supply Vehicle in Force Package I units.

1149088

28977

85407

218991

174342

130459

113129

76408

D409 Advanced Field Artiflery System (AFAS)

DB98 Component Development

2485

31204

53689

0

Project DB82 - Systems Engineering Analysis (SEA): SEA is a contract effort in support of the PEO/PM's assisting in the preparation of technical plans for PEO ASM and PEO FAS, coordinating data/information flow between the AFAS and FARV, and ensuring optimum commonality and reduced performance risk.

FY 1994 Accomplishments: Conclude SEA contract support (841)

FY 1995 Planned Program: Program concluded at the end of FY 1994.

Page 1 of 20 Pages

Exhibit R-2

Item 50

412



# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 1995

~

4 - Demonstration And Validation

PE NUMBER AND TITLE
0603645A Armored System Modernization - Adv
Dev

FY 1996 Planned Program: Program concludes at the end of FY 1994.

potential to compartmentalize Liquid Propellant (LP) and 155MM HE projectiles; generation of ballistic shock specifications; definition of interior shielding technologies providing integrated radiation and spill protection for the crew; maturation and demonstration of NBC collective protection technologies; and demonstration of standoff Project DB87 - Combat Vehicle Survivability: This effort evaluates methods of reducing AFAS and FARV susceptibility to smart/guided top and horizontal attack identification of sensor and countermeasure options and performance criteria; and simulation and field tests verifying the operational performance of selected devices. defeating both direct and indirect fire threats. AFAS and FARV vulnerability reduction activities emphasize the following: Development and demonstration of the This work, performed in coordination with TACOM Advanced Land Combat efforts, develops close-in self-protection concepts capable of detecting, tracking, and characterization of top and direct fire engagement timelines (the time required for a threat weapon or smart top attack munitions to detect and engage its target), threats and characterizes methods of reducing system vulnerability to ballistic and non-ballistic threats. Susceptibility reduction efforts consist of: analytical chemical agent detection. This work will provide the basis for development of a performance specification supporting AFAS and FARV.

## FY 1994 Accomplishments:

- Product Development Top attack protection, CATOX/PSA NBC protection, armament compartmentation, NBC Standoff protection (10447)
- Support and Management System survivability assessment, ARL analytical support (2567)
- Testing and Evaluation China Lake LP test, APG/Yuma compartment tests (235)

## FY 1995 Planned Program:

- Product Development Top attack protection, LP compartmentation (9496)
- Support and Management Support to AFAS/FARV Product Development Teams (3683)
  - Simulation, Modeling and Test (1715)
    - SBIR/STTR (319)

FY 1996 Planned Program: Reprogrammed to D409.

Project DB88 - Future Armored Resupply Vehicle (FARV): The present 155MM artillery system has a lightly protected resupply vehicle with limited payload/mobility benefits over the current system. The FARV will have increased ballistic and non-ballistic survivability features. Mobility improvements feature increased vehicle range and exposed crews during rearm/resupply operations. The Future Armored Resupply Vehicle (FARV) will increase ammunition payload and will provide automated, rapid transfer of ammunition, liquid propellant and fuel to the Advanced Field Artillery System (AFAS). The FARV will support the decentralized and continuous operations of the AFAS thereby increasing AFAS mission effectiveness. Automation and robotics in the FARV will allow crew reduction resulting in life cycle cost (405 km), speed (39 to 48 km) and cross country/position navigation.

Page 2 of 20 Pages

Exhibit R-2

tem 50

## DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE **BUDGET ACTIVITY**

4 - Demonstration And Validation

PE NUMBER AND TITLE

0603645A Armored System Modernization - Adv

Dev

February 1995

## FY 1994 Accomplishments:

- (ILPARS) as well as evaluation of critical resupply areas to include robotic handling, ammunition transfer, ammunition upload, and ammunition identification. Product Development Team support and management for the Martin Marietta contract for the 155MM Integrated Liquid Propellant Artillery Resupply System
- achieve Milestone I programmatic and technical objectives. Identify and allocate risk to system software architecture/interfaces, C3I survivability enhancements and Product Development Team support and management for efforts for the Liquid Propellant Transfer System and management of matrix support resources required to other related vehicle interfaces (11878)
  - Sole Source contracts with United Defense Limited Partnership (UDLP) for efforts associated with pre-contract costs for Development Phases I & II AFAS/FARV.

## FY 1995 Planned Program:

- Initiation of the Requirements and Analysis, Component Maturation (RA/CM) (5808)
- Completion of Martin Marietta, 155MM Integrated Liquid Propellant Resupply efforts. (500)
- Maturation of Critical Resupply Technology in the areas of robotic handling, ammunition upload, identification and continuation of product development team, matrix and core management support efforts for the liquid propellant transfer system. (14831)
  - SBIR/STTR (424)

## FY 1996 Planned Program:

- Development Phase I/II Contract Efforts (49500)
- Continued Product Development Team support, management of the liquid propellant technology and other management support. (20159)
  - Maturation of Critical Resupply Technology in the areas of robotic handling, ammunition transfer, identification and upload. (1395)

## FY 1997 Planned Program:

- Completion of Phase I, component maturation/simulation efforts and initiation of Phase II prototype fabrication and demonstration contract. (67600)
- Continued product development team support, management of the liquid propellant technology and other management support as well as initiation of government testing efforts. (25333)
- Completion maturation of critical resupply technologies. (610)

Project DB98 - Component Development: Congress has directed the acceleration of the AFAS and FARV program. This project develops and matures certain mobility technologies specifically required for the AFAS and FARV.

FY 1994 Accomplishments:

Page 3 of 21 Pages

Exhibit R-2

RDT&E BUDGET ITEM .	USTIFICATION SHEET (R-2 Exhibit)	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603645A Armored System Modernization - Adv	- Adv
	Dev	

- Product Development (29401)
- Support and Management (1630)
  - Test and Evaluation (173)

## FY 1995 Planned Program:

- Product Development (18631)
- Support and Management (3303)
  - Test and Evaluation (79)
- SBIR/STTR (472)

FY 1996 Planned Program: Program concludes at the end of FY 1995.

Propellant Gun (RLPG); matures the processing, packaging and formulation of XM46 Liquid Propellant; matures the fire control/artillery accuracy componentry; and technology capabilities in support of the maneuver force. This project develops AFAS Advanced Technology Demonstrator (ATD); matures the Regenerative Liquid provides funding for the Development Phases I/II efforts. AFAS requirements include leap-ahead capabilities in range, rate-of-fire, sustained fire, time-on-target, Project D409 - Advanced Field Artillery System (AFAS): AFAS is the Army's next generation 155MM self-propelled howitzer system providing high payoff accuracy, responsiveness, automated ammunition handling/resupply, reduced crew size and survivability.

## FY 1994 Accomplishments:

- Product Development Continue efforts in support of the Advanced Technology Demonstration and technical maturation of critical components (RLPG, Liquid Propellant, Fire Control). Award Contract Definitization portion of the Development Phases I/II contract. (65330)
- Support and Management Continue project management efforts, to include scientific and engineering management services. Prepare the Request for Proposal (RFP) for the Development Phases I/II contract. Begin preparation of the Independent Government Cost Estimate (IGCE). (9619)
  - Test and Evaluation Continue Armament/Mount reliability testing, Liquid Propellant testing and Insensitive munition testing/test projectiles. Begin ATD

Page 4 of 20 Pages

Exhibit R-2

### February 1995 0603645A Armored System Modernization - Adv DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) **Dev** 4 - Demonstration And Validation BUDGET ACTIVITY

## FY 1995 Planned Program:

- Product Development Award Requirements Analysis and Maturation portion of the Development Phases I/II contract, as well as the balance of the Development Phase I contract efforts. Continue efforts in support of the Advanced Technology Demonstration and technical maturation of critical components (RLPG, Liquid Propellant, Fire Control). (97592)
  - Support and Management Continue project management efforts, to include scientific and engineering management services. Complete both the Independent Government Cost Estimate (IGCE) and the Technical Evaluation for the Development Phases I/II contract. (9634)
- Test and Evaluation Complete ATD integration. Purchase Liquid Propellant. Continue Armament/Mount reliability testing and Insensitive munition testing. (3555)
  - **SBIR/STTR (2348)**

#### 1996 Planned Program: 7

- Product Development Continue developmental efforts under the Development Phases I/II contract. Continue efforts in support of maturation of critical RLPG technologies. (120042)
- Support and Management Continue project management efforts, to include scientific and engineering analysis and engineering management services. (10154)
  - Test and Evaluation Purchase Liquid Propellant. Begin Contractor DT&E under the Development Phases I/II contract. (263)

#### 1997 Planned Program: ξ

- Product Development Continue developmental efforts under the Development Phases I/II contract. Continue efforts in support of maturation of critical RLPG technologies. (147636)
- Support and Management Continue project management efforts, to include scientific and engineering and engineering management services. (9937)
  - Test and Evaluation Purchase Liquid Propellant, ammunition and fuzes required for the initiation of EDT-A testing. Begin EDT-A testing. Conduct Liquid Propellant Proof-of-Principle testing. (16769)

#### Program Change Summary œ

FY 1997	283148			267885	
FY 1996	212598			201513	
FY 1995	175476	172390		172390	
FY 1994	147876	147876	-2252	145624	
	Previous President's Budget	Appropriated Value	SBIR/STTR Decrement	Current Budget Submit/President's Budget	

Page 5 of 20 Pages



# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1995

BUDGET ACTIVITY
4 - Demonstration And Validation

PE NUMBER AND TITLE

0603645A Armored System Modernization - Adv
Dev

Project D.988 - Future Armored Resupply Vehicle (FARV)

Furting: None

Schedule: The AFAS/FARV program is pursuing a three plased streamlined development strategy. Under this approach, the traditional

Demonstration/Validation (Dem/Val) phase of the program is replaced with the Simulation and Component Maturation phase (Phase I) and a Prototype Fabrication and Demonstration phase (Phase II).

Technical: None

Project D409 - Advanced Field Artillery System (AFAS)

Funding None

Schedule: The AFAS/FARV program is pursuing a three phased streamlined development strategy. Under this approach, the traditional

Demonstration/Validation (Dem/Val) phase of the program is replaced with the Simulation and Component Maturation phase (Phase I) and a Prototype Fabrication and Demonstration phase (Phase II).

Technical: None

Change Summary Explanation: None

Page 6 of 20 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTI	M JUST	FICATI	ON SHE	FICATION SHEET (R-2 Exhibit)	Exhibit	l a		DATE	February 1995	266
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NUA 0603 Dev	PENUMBER APPORTUTE  0603645A Armored System Modernization - Adv  Dev	Vrmored	System A	Aodemiz	ation - Ad		PROJECT DB82
COST (in Thousands)	Fy 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB62 Systems Engineering Analysis (SEA)	28	0	0	0	0	0	0	0		0 2577
C. Cther Program Punding Summary: No.1e										
D. Sch dule Profile										
1 Conclude contract	FY 1994 2 3	<b>▼</b> *	1 F 2	FY 1995 2 3	4	FY 1996 2 3	3 4		FY 1997 2 3	4
			Page 7 of 20 Pages	0 Pages			•	Exhibit R-2		
			418							Item 50
			UNCLASSIFIED	SIFIED						

RDT&E BUDGET ITEM JUST		FICATION	<b>JHS NC</b>	ET (R-2	FICATION SHEET (R-2 Exhibit)	<b>1</b>		DATE Fet	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NUN 0603 Dev	PE NUMBER AND TITLE 0603645A Arm	IITLE Vrmored !	System N	ve number and Title 0603645A Armored System Modernization - Adv Dev	ation - Ac	,	PROJECT DB87
COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB87 Combat Vehicle Survivability	13249	15213	0	0	0	0	0	0	0	37520
C. Other Program Funding Summary: None										
D. Schedule Profile										
_	FY 1994	•	E .	FY 1995	-	FY 1996			FY 1997	•
Monitor demo of Top Attack Protection Complete PSA/CATOX filtration studies Complete Chemical Standoff Detection (LSCAD) tech demonstration Demonstration of self-protection systems Complete Artillery System BDS-D Exper Complete NBCCS Materials Compatibility Study	`****	22	* **		•	4	<b>r</b>	-		•
	ļ		Page 8 of 20 Pages	0 Pages				Exhibit R-2	Ġ	
										200

719

æ	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM ELI	EMENT/PR	OJECT (	SOST BE	REAKDO	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	ation And Va	lidation			PE NUMBER AND TITLE 0603645A Armo	AND TITLE	ed Syster	PE NUMBER AND TITLE  0603645A Armored System Modernization - Adv  Dev	zation - A		PROJECT DB87
A. Project Cost Breakdown	3reakdown										
Product Development Support and Management Testing and Evaluation SBIR/STTR Total	ent igement ation			EY 1994 10447 2567 235 13249	型 1	EY 1995 9496 3683 1715 319 15213	FY 1996	FY 1997			
B. Budget Acquisition History and Planning Information	sition History and	d Planning In	formation								
renorming Organizations	INIZACIONS										
Contractor or Government Performing Activity	Contract Method/Type or Funding <u>Vehicle</u>	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	EY 1994	FY 1995	EY 1996	EY 1997	Budget to Complete	Total
Product Development Organizations	ent Organizations	-									
Support and Management Organizations	igement Organizat	tions			7199	10447	9496				27142
SBIR/STTR Test and Evaluation Organizations	on Organizations				1703 156	2367	3683 319 1715				7953 319 2106
Government Furnished Property: None	nished Property:	None									
				ć		,				•	
				Fage	rage y of 20 rages	SS			EXUIDIT K-3	?	
					420						Item 50

420



RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3		DATE F	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603645A Arm	A Armor	ed System	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv	zation - A		PROJECT DB87
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1994 7199 1703 156 9058	EY 1994 10447 235 13249	FY 1995 9496 4002 1715 15213	EY 1996	EV 1997	Budget to Complete	Total 27142 8272 2106 37520
Pag	Page, 10 of 20 Pages	9			Exhibit R-3	<u> </u>	

RDT&E BUDGET ITEM JUST	M JUST	FICATION	NC SHE	FICATION SHEET (R-2 Exhibit)	Exhibit			DATE Fet	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NUI 060; Dev	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	ITLE Irmored (	System M	lodemiza	ation - Ac		PROJECT DB88
COST (in Thousends)	FY 1984 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
DB88 Future Armoned Resupply Vehicle (FARV) Adv Dev	23864	21563	71054	83543	118603	122952	15987	0	0	486811
C. Other Program Funding Summary										
RDTE, A Budget Activity 5 PE 0604645A, Project D418 Armored Family of	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000 129898	FY 2001 186360	To Compl Cont'd	Total Cost Cont'd
Venicles - Engineering Development RDTE, A Budget Activity 5 PE 0604645A, Project D2KT AFAS Operational Test						3740	1220	100	Cont'd	Cont'd
D. Schedule Profile										
-	FY 1994	•		FY 1995	-	FY 1996	98 "	-	FY 1997	•
Development Phases I/II Request for	1		-		•	4		-	7	t
Award Contract Definitization Phase of		*								
Award Requirements Analysis and			*							
Maturation Phase of Development Phases I/II Contract										
Milestone I Review			**							
Award Development Phases I/II Contract				×					<b>&gt;</b>	
Development Phase II IPR									×	
		1	Page 11 of 20 Pages	0 Pages				Exhibit R-2	8	
			422							Item 50



RD	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM ELE	MENT/PR	OJECT C	SOST BE	REAKDO	WN (R-3		DATE Fe	February 1995	98
BUDGET ACTIVITY 4 - Demonstration And Validation	ation And Val	idation			PE NUMBER AND TITLE 0603645A Arm	AND TITLE	ed Syster	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	zation - A		PROJECT DB88
A. Project Cost Breakdown	reakdown										
Development RA/CM Phase I & II Contract Contractor Engineering Support Government Engineering Support Program Management Support SBIR/STTR Total	CM Phase I & II C ering Support beering Support bent Support	ontract		EY 1994 2500 2027 15628 709 0 23864		EY 1995 5808 2353 11696 1282 424 21563	EY 1996 49500 4800 13054 3700 0 71054	EX 1997 67600 7100 15043 3800 0 93543			
B. Budget Acquisition History and Planning Information	iition History and	Planning Inf	ormation								
Performing Organizations	nizations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations United Defense SS/CPIF	ent Organizations SS/CPIF	Sep 94	TBD	TBD	N/A	2500	2808	49500	90929	Cont'd	Cont'd
Partnership Martin Marietta,	SS/CPFF	Mar 93	5700	5700	2600	2600	200			0	5700
Burlington, VI ARDEC, Picatinny Arsenal, NJ	Ø ,						300	3000	3000	Cont'd	Cont'd
Support and Management Organizations Dept. of Energy - MIPR Oak Ridge Nat'1 Labs, Tenn.	gement Organizati MIPR	ions			5225	6903	3100	1395	610	0	17233
				Page	Page 12 of 20 Pages	S			Exhibit R-3	<b>ن</b> -3	
					423				• • •		Item 50

RDT	RDT&E PROGRAM ELEMENT/P	RAM ELE	EMENT/PR	OJECT (	ROJECT COST BREAKDOWN (R-3)	<b>EAKDO</b>	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	on And Val	lidation			PE NUMBER AND TITLE 0603645A Arm	AND TITLE	PENUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	n Moderni	zation - A		PROJECT DB88
Contractor or Government Performing Activity PM AFAS/FARV, Picatinny Arsenal,	Contract Method/Type or Funding <u>Yehicle</u>	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994 648	EY 1994 709	FY 1995 1282	EY 1996 3700	FY 1997 3800	Budget to Complete Cont'd	Total Program Cont'd
catinmy	&				4448	7066	6330	5515	6447	Cont'd	Cont'd
Other Field	80 80				1443	1659	1966	3144	4386	Cont'd	Cont'd
Various other					4881	2427	1853	4800	7100	Cont'd	Cont.d
Contracts Test and Evaluation Organizations TECOM, Yuma PO Proving Grds, AZ SBIR/STTR	Organizations PO						424		009	Cont'd	Cont'd
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation SBIR/STTR Total Project	sed Property: elopment Management uluation	None			Total Prior to  FY 1994 2600 16645 0 0	FY 1994 5100 18764 0 0 23864	EY 1995 6608 14531 0 424 21563	FY 1996 52500 18554 0	FY 1997 70600 22343 600	Budget to Complete Cont'd Cont'd Cont'd	Total Program Cont'd Cont'd Cont'd Cont'd
				Page	Page 13 of 20 Pages	S			Exhibit R-3	£-1	

RDT&E BUDGET ITEM JUSTII	M JUST	FICATI	ON SHE	ET (R-2	FICATION SHEET (R-2 Exhibit)			DATE F.	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NUM 0603	PE NUMBER AND TITLE 0603645A Arme Dev	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	System	Moderniz	ation - A		PROJECT <b>DB98</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1907 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
DB96 Component Development	31204	22465	0	0	0	0	0	0	0	53689
C. Other Program Funding Summary: None										
D. Schedule Profile										
	FY 1994		E .	FY 1995	-	FY 1996	, %	-	FY 1997	•
Automotive Test Rig (ATR)	**		7 >		•	4	<b>+</b>	-		+
Final Software SIL demo	ς	×								
Milestone I Decision			* *							
			Page 14 of 20 Pages	O Pages				Exhibit R-2	.2	

425

RD	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM EL	EMENT/PR	OJECT (	COST BI	REAKDO	WN (R-3		DATE FO	February 1995	95
8UDGET ACTIVITY 4 - Demonstr	BUDGET ACTIVITY 4 - Demonstration And Validation	lidation			PE NUMBER 060364: Dev	PE NUMBER AND TITLE 0603645A Armor Dev	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	n Moderni	zation - A		PROJECT DB98
A. Project Cost Breakdown	3reakdown										
Product Development Support to Management Test & Evaluation SBIR/STTR Total	ent ement			EY 1994 29401 1630 173	<u>a</u>	EV 1995 18631 3303 79 472 22485	FY 1996	FY 1997			
B. Budget Acqui	B. Budget Acquisition History and Planning Informs' lon	d Planning Is	<u>ıforma' ion</u>								
Performing Organizations	mizations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	EY 1994	FY 1995	EY 1996	EY 1997	Budget to Complete	Total Program
Product Developm	Product Development Organizations	••				20401	18431				4603
Support and Manz	Support and Management Organizations	tions				10+67	16091				7608+
SBIR/STTR Test and Evaluation Organizations	on Organizations					1630	472				4933
Government Furn	Government Furnished Property: None	None				1/3	2				757
				Page	Page 15 of 20 Pages	es			Exhibit R-3	3.3	
					``						Itom 50

?

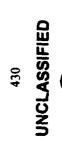
RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603645A Arm	AND TITLE A Armori	ed System	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	zation - A		PROJECT DB98
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1994	EY 1994 29401 1630 173 31204	EY 1995 18631 3775 79 22485	FY 1996	FY 1997	Budget to Complete	Total 48032 5405 252 53689
					: :		
rage	rage 10 of 20 rages	S			EXHIBIT K-3	5	

RLT&E BUDGET ITEM JUSTI	TSUL M	FICATI	ON SHE	ET (R-2	FICATION SHEET (R-2 Exhibit)			DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NUI 0603 Dev	PE NUMBER AND TITLE 0603645A Arm	TTLE	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	lodemiza	ation - Ac		PROJECT D409
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1986 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D409 Advanced Fleid Artiflery System (AFAS)	76466	113129	130459	174342	218991	185407	28977	0	0	1148068
C. Other Program Funding Summary	700	200	)						of.	Total
RDTE, A Budget Activity 5 PF 0604645A Project D417 AFAS FMD	FT 1994	FT 1995	861 13	FY 199	F Y 1998	FY 1999	202841	332217	Cont'd	Cont.'d
RDTE, A Budget Activity 5 PE 0604645A Project D2KT AFAS EMD						3740	1220	100	Cont'd	Cont'd
RDTE, A Budget Activity 5 PE 0604645A, Project D175 AFAS EMD	7615	6240	6388	969		4379				31587
D. Schedule Profile										
_	FY 1994	4	- - F	FY 1995	4	FY 1996	9,8	-	FY 1997	-
Weapon Demonstrator Delivery	` <b>*</b>			•	•	1	<b>,</b>	•	) 1	·
Development Phases I/II Request for Proposal (RFP) Release		*								
Award Contract Definitization Phase of		×								
Development Phases I/II Contract Award Requirements Analysis and			*							
Maturation Phase of Development Phases			ł							
I/II Contract			;							
Milestone I Keylew ATD EDT			. ×							
Award Development Phases I/II Contract				×					;	
Development Phase II In-Process Review									×	
									!	
			Page 17 of 20 Pages	0 Pages				Exhibit R-2	2	
			•							Itom &0

428 UNCLASSIFIED

RDT	RDT&E PROGRAM ELEMENT/PROJECT	RAM ELE	MENT/PR	OJECT (	SOST BE	REAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	tion And Val	lidation			PE NUMBER AND TITLE 0603645A Arm Dev	AND TITLE	ed Syster	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	zation - A		Рколест <b>D409</b>
A. Project Cost Breakdown	eakdown										
Product Development Support and Management Test and Evaluation SBIR/STTR	nt ement		,	EY 1994 65330 9619 1517	<u>ਤ</u> ੂੰ	EY 1995 97592 9634 355 2348	FY 1996 120042 10154 263	FY 1997 147636 9937 16769			
Total  B. Budget Acquisition History and Planning Information	tion History and	Planning In	formation	76466		113129	130459	174342			
Performing Organizations	izations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	EY 1996	EY 1997	Budget to Complete	Total Program
Product Development Organizations United Defense, Comp/CPIF	nt Organizations Comp/CPIF	May 91	76473	76473	61281	14892	300				76473
Munneapolis, MN Martin Marietta,	SS/CPIF/CP	Jan 92	TBD	103449	70712	26587	6150				103449
United Defense,	FF SS/CPIF	Sep 94	TBD	TBD	N/A	2000	68222	101600	134300	Cont'd	309122
Minneapolis, MIN AMCCOM, Picatinny Arsenal, NJ, Watervliet Arsenal, NY, Rock Island Arsenal, IL					39239	8888	10657	12883	9535	Cont'd	82202
	,		ļ	Page	Page 18 of 20 Pages	sə.	:		Exhibit R-3	<b>?-3</b>	
					100			İ			Item 50

RD	RDT&E PROGRAM ELEMENT/P	RAM ELE	MENT/PR	OJECT	COST BI	REAKDO	ROJECT COST BREAKDOWN (R-3)		DATE	February 1995	966
<b>BUDGET ACTIVITY</b>					PE NUMBER	PE NUMBER AND TITLE					PROJECT
4 - Demonstration And Validation	ation And Va	idation			060364 Dev	5A Armoi	0603645A Armored System McJernization - Adv Dev	n Modern	ization - A		D409
Contractor or Government	Contract Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Proving Grd, MD					7839	1465	2794	1390	900	Cont'd	14488
Watertown, MA											
Olin, Charleston,	SS/FFP	Sep 93	1988	1988	1988						1988
7											
Grumman, Beth		Nov 93	4275	4275	3475	00 <b>8</b>					4275
Page, NY											
Martin Marietta,	Comp/CPFF	Jan 93	4594	4594	2166	2018	410				4594
Pittsfield, MA		;									
LB&M, Lawton,	Comp/CPFF	Feb 93	1806	1806	1806						1806
5 :											
Various other					13254	4680	9059	4169	2801	Cont'd	33963
OGA's and											
Contractors											
Support and Management Organizations	gement Organizat	ions									
PM AFAS/FARV,					3866	3035	2595	4895	4895	Cont'd	19286
Picatinny Arsenal,											
2											
AMCCOM,					4740	4773	6039	3900	3900	Cont'd	23352
Picatinny Arsenal,											
2											
TRW, Redondo					2188	1315					3503
Beach, CA											
Various OGAs and					916	496	1000	1359	1142	Cont.d	4913
Contractors											
Test and Evaluation Organizations	n Organizations										•
				1							**
				Page	Page 19 of 20 Pages	es			Exhibit R-3	-3	



RDT&E	PROGE	RDT&E PROGRAM ELEMENT/P	MENT/PR	ROJECT	COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	And Vali	dation			PE NUMBER 060364 Dev	PE NUMBER AND TITLE 0603645A Armored System Modernization - Adv Dev	ed Systen	n Modern	ization - /		Рвојест <b>D409</b>
Contractor or Con Government Me	Contract Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to						E
uma Is, AZ, rdeen Is, MD	Vehicle	Date	EAC	EAC	FY 1994 1934	FY 1994 1517	FY 1995 2705	FY 1996	3973	Sudget to Complete Cont'd	Program 10129
	SS/FP1	May 93	3307	3307	3307						3307
ston,	SS/FPI	May 93	3168	3168	3168						3168
TBD-LP Purchase TBD-Ammo Purchase		OBT OBT	OBT OBT	OBT OBT	N/A N/A		850	263	8704 4092	Cont'd Cont'd	9817
SBIR/STTR							2348				2348
Government Furnished Property: None	Property: }	vone									
					Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budger to Complete	Total Program
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	oment nagement tion				201760 11710 8409	65330 9619	97592 9634	120042	147636		532360
Total Project					221969	76466	113129	130459	174342	Cont'd	Cont'd
				Page	Page 20 of 20 Pages	es			Exhibit R-3	2-3	

RDT&E BUDGET ITEM JUST	EM JUS	TIFICAT	ION SH	IEET (R	FICATION SHEET (R-2 Exhibit)	it)		DATE Fet	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 060 Dev	PENUMBER AND TITLE OG03649A Engi Development	ritle E <b>ngineer</b> ot	Mobility	Equipme	ENUMBER AND TITLE  3603649A Engineer Mobility Equipment Advanced  3evelopment	<u> </u>	PROJECT DG24
COST (in Thousands)	FY 1994 Actual	FY 1995 Eathmate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Coe:
DG24 M1 Breacher	28070	15728	5615	0	0	0	0	0		24724

## A. Mission Description and Budget Item Justification

automatic depth control, power bus, vetronics, vehicle drive-by-wire, survivability, and hydraulics. The project transitions to PE #0604649A, DG25, for the Engineering battlefield. The MI Breacher will be capable of moving with, and will be as survivable as, the force it is supporting. This program element/project is correctly placed in control, a power driven excavating arm, and an armored commander's control station. The M1 Breacher will provide the Combat Engineer with significantly improved The MI Breacher will be developed around the MI-Abrams tank chassis and will integrate a versatile/survivable full-width mine clearing blade with automatic depth Budget Activity 4, focusing on efforts associated with advanced technology development to include demonstration and validation in the areas of mine clearing blade mission effectiveness and crew/vehicle survivability while clearing minefields and removing complex natural and man-made obstacles at the forward edge of the and Manufacturing Development (EMD) phase of the acquisition life cycle in FY 96.

Project DG24 - Breacher Advanced Development: The MI Breacher will provide the maneuver forces the capability to conduct in-stride breaches of complex obstacles using its full-width mine clearing blade and power driven excavating arm.

## FY 1954 Accomplishments:

- Conduct Critical Design Review (7358).
- Complete vehicle design drawings and begin component fabrication (15267).
- Begin prototype fabrication (6445).

## FY 1995 Planned Program:

- Complete prototype fabrication (6430).
- Conduct contractor shakedown testing and training (4585).
- Complete Preliminary Draft Equipment Publications (2552).
- Begin government development testing (1847).
  - SIBR/STTR (312).

## FY 1996 Planned Program:

- Complete government development testing and conduct Early User Testing (2370).
- Refine design, validate logistics functions, and apply engineering changes (3245).

Page 1 of 4 Pages

whihit R.2

432

RDT&E BUDGET ITEM JUSTI	M JUSTI		HS NC	ET (R-2	FICATION SHEET (R-2 Exhibit)			DATE Feb	February 1995	395
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 060 Dev	PE NUMBER AND TITLE 0603649A Engi Development	PENUMBER AND TITLE 0603649A Engineer Mobility Equipment Advanced Development	Mobility E	-duipme	nt Advan		PROJECT DG24
B. Program Change Summary Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SIBR/STTR decrement (474)		FY 1994 29464 29464 -394	<u>a</u>	EY 1995 11339 15726	FY 1996 0	FY 1997	77			
<ul><li>b. Reprogrammed into PE (80)</li><li>Current Budget Submit/President's Budget</li></ul>		29070		15726	\$615					
C. Other Program Funding Summary	FY 1994	EY 1995	EY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
RDTE, A Budget Activity 5 PE 0604649A Project DG25 M1 Breacher Dev			10918	13275	7908	10610			į	42711
PA, WTCV GZ3200 (Breacher MOD)				74822	93228	66696	120228	130440	Cont'd	Cont'd
PA, WTCV GEO175 Breacher (Spares)					1014	1216	2405	2229	Cont'd	Cont'd
	FY 1994 2 3	4	1 2	FY 1995 2 3	4	FY 1996 2 3	δ ω 4		FY 1997 2 3	4
Conduct Critical Design Review (CDR) X* Start Development and Early User Testing					×					
Conduct Milestone II Review Award Engineering and Manufacturing						××				
Development (EMD) Contract Conduct Low Rate Initial Production (LRIP) In-Process Review (IPR)								^	×	
Award LRIP Contract									×	
			Page 2 of 4 Pages	Pages				Exhibit R-2		

RDT&	E PROG	RAM ELI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT C	SOST BI	REAKDO	JWN (R-3	<u> </u>	DATE	February 1995	1995
BUDGET ACTIVITY 4 - Demonstration And Validation	on And Va	lidation			PE NUMBER AND TIT 0603649A En Development	PE NUMBER AND TITLE 0603649A Engin Development	PENUMBER AND TITLE 0603649A Engineer Mobility Equipment Advanced Development	ity Equipn	nent Adva	nced	PROJECT DG24
A. Project Cost Breakdown	kdown										
				FY 1994		FY 1995	FY 1996	FY 1997	7		
Development Engineering	ring			24791		7345	1150		0		
Logistics Support				1867	_	2552	187		0		
System Test & Evaluation	tion			205		2932	3478	-	0		
System Project Management SIBR/STTR	ement			2207		2585 312	908	~	0		
Total				29070		15726	5615				
B. Budget Acquisition History and Planning Information	n History and	d Planning In	formation								
Performine Oreanizations	tions										
Contractor or	Contract										
	Method/Type	Award or	Performing	Project	Total					•	
Performing of Activity	or runding Vehicle	Obligation Date	Activity EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
		,									1
Product Development Organizations United Defense SS-CPIF	t <b>Organizatio</b> SS-CPIF	<b>ns</b> 9/92 (K	\$1936	\$1936	12282	26503	10660	2511	0	0	51956
		Mod)							•	•	
Other Contracts	Various	Various				247	247				494
Support and Management Organizations TACOM	ment Organi	zations			1405	1686	1968	<b>7</b> 15	•	c	4403
Warren, MI							)		,	•	
ANAD					125	0	0	0	0	0	125
Anniston, AL											
Other Gov't					370	340	392	700	0	0	1302
Agencies					•	,					
Other					0	0	312	0	0	0	312
				Poas	Page 3 of 4 Pages				Evhihit R.3	۲,	
						**					

434 UNCLASSIFIED



RDT&E PROGRAM ELEMENT/P	GRAM ELI	EMENT/PROJECT	CT COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	Validation		Development	PENUMBER AND TITLE 0603649A Engineer Mobility Equipment Advanced Development	eer Mobili	ty Equipm	nent Adva		PROJECT DG24
Test and Evaluation Organizations TECOM APG, MD	ions		146	190	1547	1570	0	0	3453
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle	ty  pe Award or  Obligation  Date	Delivery Date	Total Prior to FY 1994	FY 1994	EY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property TACOM Requisitions Warren MI	, ss Various	Various	\$\$	104	0	0	0	0	159
Support and Management Property: None Test and Evaluation Property TACOM Requisitions Various Warren, MI	perty: None		0	0	009	800	0	0	1400
Subtotal Product Development	į		Total Prior to FY 1994 14383	EX 1994 29070	FY 1995 15126	FY 1996 4815	FY 1997	Budget to Complete	Total Program 63394
Subtorial Support and Evaluation Total Project			14383	29070	600 15726	800 5615			1400
			Page 4 of 4 Pages	Si			Exhibit R-3	7-3	
			435						Item 51

RDT&E BUDGET ITEM JUS	EM JUS	TIFICAT	FION SE	IEET (R	TIFICATION SHEET (R-2 Exhibit)	oit)		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 060 (AT	PE NUMBER AND TITLE 0603653A Adve (ATAS)	e NUMBER AND TITLE 0603653A Advanced Tank Armament System (ATAS)	I Tank Ar	mament	System	ā D	PROJECT <b>DB99</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost

in lethality for the next major upgrade to the Abrams tank after the M1A2. This follow-on to the M1A2 is notionally identified as Tank 1080 based on the original plan to supporting tank lethality improvements. This program is developing and demonstrating a number of key gun and fire control technologies which offer significant payoffs A. Mission Description and Budget Item Justification Our success in Desert Storm was due in large part to the superiority of the armament systems of our tanks over those of the Iraqi Army. We were able to see, hit and kill the enemy long before they were even aware of our presence. The goal of the Advanced Tank Armament System (ATAS) program is to maintain that superiority over increasingly more capable future enemy tanks. The ATAS program is one of the principal programs purchase 1079 M1A2.

Continuing

Continuing

28

10058

88

3

DB99 Advanced Tank Armament System

Commander and Gunner. ATAS I integrates the Core Technology components into the size weight and current electronic architecture of the MIA2. ATAS II develops an components along with the Core Technology are integrated by ATAS II into a high speed digitized open distributed electronic architecture capable of easily incorporating components that are applicable to both the current MIA2 1553 Data Bus architecture and a new open distributed digital architecture being developed under this program. The ATAS Program has two main phases (ATAS I and ATAS II) and a common work effort (Core Technology). Core Technology develops gun and fire control system automatic loader, Combat Protection System, Continuous Muzzle Reference System, Electric Gun/Turret Drive, Digital Adaptive Stabilization and a new turret. These Core Technology consists of the XM291 gun with Automatic Muzzle Reference System, Automatic Target Tracker, and Second Generation Thermal Sights for new components as they are developed.

Demonstration and Validation as defined in Part 3, DoDI 5000.2 The ATAS program is conducting prototyping, testing and early operational assessment of critical tank armament systems, subsystems, and components; identifying cost drivers and alternatives using modeling and simulation, and working with the User representative to The ATAS program is appropriately in Budget Activity 4 - Demonstration and Validation. The activities conducted in the ATAS Program fall under the heading of establish performance objectives and identify cost-schedule-performance trade-offs.

FY 1994 Accomplishments: Program was not appropriated in FY94

## FY 1995 Planned Program:

- Core Technology Design & fabricate the new gun tube and support structure (1900)
  - ATAS I work delayed until FY 98 due to Congressional reduction in funding (0)
- ATAS II complete Brassboard Demonstration and Brassboard Systems Integration Laboratory (2947)
- SBIR/STTR Reduction (93)

Page 1 of 5 Pages



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-	2 Exhibit)		DATE	February 1995	
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603653A Adva (ATAS)	TITLE Advanced	PE NUMBER AND TITLE 0603653A Advanced Tank Armament System (ATAS)	ent Systei	E	
FY 1996 Planned Program:  Core Technology - test gun tube/support structure (1300)  Core Technology - design/fabricate circuit board .tardware for M1A2/Tank 1080 integration (1555)  ATAS II - procure objective hardware, integrate software with objective hardware (7100)	080 integration (1 ware (7100)	.555)				
<ul> <li>FY 1997 Planned Program:</li> <li>Core Technology - integrate circuit board hardware with software (1679)</li> <li>ATAS II - complete Objective Hardware Systems Integration Demonstration (6300)</li> <li>ATAS II - complete turret design (2000)</li> </ul>	(6300)					
B. Program Change Summary	1006	7001	7001			
	10075	10002	10026			
Adjustments to Appropriated Value  Current Budget Submit/President's Budget  0	4940	9955	6266			
C. Other Program Funding Summary: N/A						
D. Schedule Profile FY 1994	FY 1995	4	FY 1996	-	FY 1997	
1	1	· ×	1	•	1	<u> </u>
Complete the improved gun stabilization test (Core Technology)			×			
Complete ATAS II Brassboard  Demonstration  Complete ATAS II Brassboard Systems	×	×				
	Page 2 of 5 Pages			Exhibit R-2	! R-2	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)		DATE February 1995	1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603653A Advanced Tank Armament System (ATAS)	c Armament S	System	PROJECT DB99
FY 1994	FY 1995 FY	Y 1996	FY 1997	4
Design processor circuit boards/hardware for M1A2/Tank 1080 integration	· ×	n	4	•
(Core Technology)				-
Build processor circuit boards /hardware		×		
(Core 1 echnology)  Procure hardware for ATAS II Objective	×			
Systems Integration Lab		>		
objective hardware		<		
Integrate target tracking and stabilization			×	
nardware with software (Core				
Complete ATAS II Objective Hardware			×	
Systems Integration Lab &				
Demonstration				;
Maiss AIAS II lure Design				×
Pc	Page 3 of 5 Pages		Exhibit R-2	

965

RDT&E PROGRAM ELEMENT/P	GRAM EL	EMENT/PR	ROJECT COST BREAKDOWN (R-3)	SOST BR	<b>EAKDO</b>	WN (R-3		DATE F.	February 1995	966
BUDGET ACTIVITY 4 - Demonstration And Validation	Validation			PE NUMBER AND TITLE 0603653A Adve (ATAS)	AND TITLE	iced Tank	PE NUMBER AND TITLE 0603653A Advanced Tank Armament System (ATAS)	ıt System		PROJECT DB99
A. Project Cost Breakdown Primary Hardware Development/Contractor Primary Hardware Development/Government Quality Assurance Developmental Test & Evaluation Program Management (PM-TMAS/ARDEC) Miscellancous	Contractor Government n		EY 1994	EZ	EY 1995 2440 1600 100 500 200	FY 1996 7200 700 300 600 555	EY 1997 6400 2000 300 100 600 579			
Total			0		4940	9955	6266			
B. Budget Acquisition History and Planning Information Performing Organizations	and Planning In	formation								
Contractor or Contract Government Method/Type A Performing or Funding O Activity Vehicle D Product Bevelonment Organizations	e Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to	EY 1994	FY 1995	FY 1996	EY 1997	Budget to Complete	Total Program
Texas C-CPFF Sep 9  Benefit and Management Organization  Control of the control o	Sep 90 Jan 93 A)	OBT OBT	49600	• • •	000	2400 1400 40 200	7100 700 100	6300 2000 100	Cont'd Cont'd Cont'd	Cont'd Cont'd Cont'd
ARDEC Test and Evaluation Organization						009	006	006	Cont'd	Cont'd
CSTA						100	600 555	100	Cont'd Cont'd	Cont'd
			Page	Page 4 of 5 Pages	s			Exhibit R-3	2-3	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BE	EAKDO	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603653A Adva (ATAS)	AND TITLE IA Advan	PE NUMBER AND TITLE 0603653A Advanced Tank Armament System (ATAS)	Amamen	nt System		
Government Furnished Property: Not Applicable							
	Total Prior to					Budget to	Total
Subtotal Product Development	FY 1994	FY 1994	FY 1995 4040	FY 1996 7900	FY 1997 8400	Complete Cont'd	Program Cont'd
Subtotal Support and Management Subtotal Test and Evaluation			99 5	<u>8</u> 8	8 2	Cont'd	Cont'd
Other			200 200 200	555	579		
Total Project			4940	9955	9979	Cont'd	Cont'd
					: :		
	rage 2 of 3 rages				EXNIDA K-3	55	

5





RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)	CATION	SHEET	(R-2 E)	(НІВІТ)				DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060	PE NUMBER AND TITLE 0603713A ADD	E NUMBER AND TITLE 0603713A ADDS-Army Data Distribution System	Data Dis	tribution (	System	·	
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	0	8865	1989	7378	9009	0	0	0	38800	345041
D370 JTIDS/EPLRS (Formally known as PJH-PLRS/JTIDS Hybrid)	0	9 <b>8</b> 05	5067	9009	6005	0	0	0	36800	340563
02QT EPLRS/JTIDS OPER TEST	0	0	199	3781	0	0	0	0	0	4478

support, maneuver control, intelligence and combat service support automated system. Project D370 is capable of "digitizing data messages" that must be transmitted on Tactical Information Distribution System (JTIDS) by the Operational Test and Evaluation Command (OPTEC). These projects focus on efforts associated with advanced manpack, surface vehicle and airborne vehicle user units to achier a range extension. It has been designed specifically to meet the data communication requirements of position location capabilities to the soldier and his unit commander. Project D2QT finances the direct costs of planning and conducting operational testing of the Joint A. Mission Description and Budget Item Justification: The Army Data Distribution System (ADDS), which consists of the Enhanced Position Location Reporting System (EPLRS), the Joint Tactical Information Distribution System (JTIDS), and Near Term Digital Radio (NTDR) provides support to the Army's air defense, fire technology development used to demonstrate general military utility to include demonstration and validation in the area of Army Data Distribution and are correctly emerging tactical automated data processing and sensor based systems. The ADDS will provide reliable, real-time, secure, jam-resistant data communications and the battlefield. It is capabic of providing multi-functions: data communications, unit locations and unit identifications. The ADDS network automatically utilizes placed in Budget Activity 4.

Project D370-EPLRS/JTIDS: This project provides data distribution support to the Army's air defense, fire support, maneuver control, intelligence and combat service support automated systems, and is capable of "digitizing data messages" that must be transmitted on the battlefield. The project will provide reliable, real-time, secure, am-resistant data communications and position location capabilities to the soldier and his unit commander.

## FY 1994 Accomplishments:

- Continued JTIDS Development (2839)
- Completed JTIDS Class 2M (CL2M) Reliability Dev Test (227)
- Conducted JTIDS CL2M Limited User Test (LUT) (919)
- Began JTIDS Life Cycle Software Engineering (LCSE) (1000)
  - Continued EPLRS Downsized Net Control Station (11271)
- Initiated EPLRS System Improvement Program (3100)

## FY 1995 Planned Program:

Continue JTIDS Development(2576)

Exhibit R-2

Page 1 of 8 Pages

#### February 1995 0603713A ADDS-Army Data Distribution System DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 4 - Demonstration And Validation BUDGET ACTIVITY

- Continue Operational Test (OT) of EPLRS downsized NCS-E (2427)
- Continue JTIDS LCSE (300)
- Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR) (96)

## FY 1996 Planned Program:

- JTIDS Software Development Completion (1200)
- NCS (D) Software Development Completion (1600)
- NTDR Program Hardware and software development (2377)
- Program Management Activities (820)

## FY 1997 Planned Program:

- Continue NTDR Program (5096)
- Program Management Activities (910)

ACQUISITION STRATEGY FOR PROJECT D370: The EPLRS System Improvement Program (SIP) is designed to significantly reduce the cost of the radio. A sole source contract was awarded to Hughes Aircraft in Sep 94. The NTDR program will follow a Non-Development Item (NDI) approach with an RDTE contract award scheduled for Nov 95 with an option award scheduled for 1 QTR FY 97.

Position Location Reporting System (EPLRS)/Joint Tactical Information Distribution System (JTIDS) by the Operation Test and Evaluation Command (OPTEC). JTIDS is Project D2QT - EPLRS/JTIDS Operational Test: This project finances the direct costs of planning and conducting operational testing and evaluation of the Enhanced an Acquisition Category (ACAT) I system with an Initial Operational Test and Evaluation (IOTE) beginning in 1 QTR FY 97. Operational Testing is conducted under conditions, as close as possible, to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an ndependent test and evaluation of effectiveness and suitability of the system. Project D2QT is restructured from within this PE (PE 0603713A) and is not a new start.

FY 1994 Accomplishments: Project not funded

FY 1995 Planned Program: Project not funded

## FY 1996 Planned Program:

- TIDS IOTE testing (517)
- JTIDS IOTE evaluation (150)
- Player unit support of IOTE (30)

Page 2 of 8 Pages

xhihit R.2

UNCLASSIFIED

442



4

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	<b>IFICATION</b>	SHEET (R	-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY 4 - Demonstration And Validation		PE NUMBER AND TITLE 0693713A ADD	ADDS-Army I	PE NUMBER AND TITLE OG93713A ADDS-Army Data Distribution System	ion System
<ul> <li>FY 1997 Planned Program:</li> <li>JTIDS IOTE testing (3220)</li> <li>JTIDS IOTE evaluation (341)</li> <li>Player unit support of IOTE (220)</li> </ul>					
B. Program Change Summary Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SBIR/STTR decrement (-29.)	FY 1994 19647 19647 -291	FY 1995 5587 5399	FY 1996 0 -	FY 1997 0 -	
Current President's Budget Submit	19356	\$399	6694	7876	
	Pag	Page 3 of 8 Pages			Exhibit R-2

RDT&E BUDGET ITEM JUST	M JUST		ON SHE	ET (R-2	FICATION SHEET (R-2 Exhibit)			DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060;	PE NUMBER AND TITLE 0603713A ADD	PENUMBER AND TITLE OG03713A ADDS-Army Data Distribution System	Data Dist	ribution §	System	ă O	PROJECT D370
COST (in Thousands)	FY 1994 Actual	FY 1905 Estimate	FY 1996 Estimate	FY 1987 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
JTIDS/EPLRS (Formerly known as PJH-PLRS/JTIDS Hybrid)	19356	5386	2867	9006	8008	0	O	0	36800	
C. Other Program Funding Summary									ļ	F.
Other Procurement-2, Army, SSN:BU1400	EY 1994 36978	FY 1995 9490	EY 1996 19968	EY 1997 10331	EY 1998 9843	EY 1999 51704	EY 2000 54683	EY 2001 54691	Compl Cont	Cont
D. Schedule Profile	FY 1994	4	- Fr C	FY 1995	4	FY 1996	% <sub>~</sub>	_	FY 1997	4
Completed CL2M RDT EPLRS SIP Award Complete CL2M LUT LRIP decision for CL2M terminals NTDR Award Complete NCS-E(D) OT NCS (D) Initiate JTIDS CL2M IOTE Complete JTIDS CL2M IOTE NTDR Option Award		*	* *		×	××	×	××		

Page 4 of 8 Pages 444

Item 53

Exhibit R-2

RDT&E PROGRAM ELEMENT/PROJECT	GRAM EI	-EMENT/		COST BR	REAKDO	BREAKDOWN (R-3)	<u>~</u>		DATE		
8UDGET ACTIVITY 4 - Demonstration And Validation	on And Valid	-tation			PE NUMBER AND TITLE	AND TITLE				PROJ	PROJECT
					U603/13A		Army Data	ADDS-Army Data Distribution System	System		D370
A. Project Cost Breakdown	ukdown										
Contractor Engineering Support Program Management Support	g Support Support			EY 1994 15587 2995		EX 1995 3442 1957	EY 1996 2377 820	EY 1997 50%			
Miscellaneous   Total				174		5399	2800 2800 5997	0 9009			
B. Budget Acquisition History and Planning Information	n History and P	langing Inform	etion								
Performing Organizations	tions										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing Activity	or Funding	Obligation	Activity	Office	Prior to					Budget to	
Product Development Organizations	Venicie 1 Organizations	Sign Trails	EAC	EAC	EX 1994	EX 1994	<b>EY 1995</b>	EY 1996	FY 1997	Complete	Program
Hughes Aircraft	SS/CPFF	SEP 92	183364	183364	181500	1864	0	0	C	c	103364
Hughes Aircraft	SS/CPIF	SFP 64	17000	6000	•			,	•	•	103304
Fullerton, CA			1/200	1/988	>	3100	0	0	0	0	3100
GEC-MARCONI Little Falls, NJ	SS/CPIF	NOV 93	21440	21440	21293	147	0	0	0	0	21440
TOAD	MIPR	JUN 92	25600	25600	25600	0	0	C	c	c	00336
INISYS Com	MIPP	MADOA	***************************************				•	<b>,</b>	>	>	2000
St. Paul, MN	V Jilla	MAK ¥	3833	3833	1940	1893	0	0	0	0	3833
UNISYS Corp	MIPR	MAY 94	1424	1424	c	1424	0	0	0	0	1424
TBD	C/FFP	110V 95	TBD	32000	c	0	0	2377	\$096	33100	30573
Support and Management Organizations	nent Organizatic	SQC SQC				7251	4667	3620	910	4700	21148
Miscellaneous	0	}			0750	1188	733	•	•		
Test and Evaluation Organizations	Organizations		1			3	76/	>	0	0	11648
	MILT	MAY 94	19539	19539	17802	1737	0	0	0	Э	19539
				Page	Poge & of 8 Dags	_			:		
				1 000	J of a Cakes				Exhibit R-3	~	

RDT&E PROGRAM ELEMENT/PROJECT	LEMENT/	PROJECT COST BREAKDOWN (R-3)	<b>SEAKDON</b>	WN (R-3)			DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	dation		PE NUMBER AND TITLE 0603713A ADD	ND TITLE	PENUMBER AND TITLE 0603713A ADDS-Army Data Distribution System	istribution	System		PROJECT <b>D370</b>
Government Furnished Property Contract Method/Type Item or Funding Description Yehicle	Award or Obligation Date	Delivery D <b>ate</b>	Total Prior to FY 1994	EY 1994	EY 1995	EY 1996	EY 1997	Budget to Complete	Total
Miscellancous REQN/WR/MI Miscellancous PR Support and Management Property: None Test and Evaluation Property: None	I. None		9120	477	0	0	0	0	9894
Subtotal Product Development Subtotal Supyort and Management Subtotal Test and Evaluation			Total Prior to EY 1994 239453 ?750 17802	EY 1994 16453 1166 1737	EY 1995 4667 732	EY 1996 5997	EY 1997 6006	Budget to Complete 36800	Total Program 309376 11648
Total Project			267005	19356	5399	5997	9009	36800	••,
		Page	Page 6 of 8 Pages				Exhibit R-3	ę,	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	MENT/	PROJEC	T COS	T BREA	KDOW	4 (R-3)		DATE Fe	February 1995	195
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060	PE NUMBER AND TITLE 0603713A ADDS-Army Data Distribution System	TLE JDS-Army	/ Data Dis	tribution	System		PROJECT D2QT
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1937 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
EPLRS/JTIDS OPER TEST	0	C	7887	3781	0	0	0	0	0	
C. Other Program Funding Summary: N/A										
D. Schedule Profile	FY 1994		ļī.	FY 1995		FY 1996	%		FY 1997	
Initiate JTIDS IOTE Complete JTIDS IOTE	6	4	1 2	m	4	61	£ X	- ×	2 3	4
				·				: :		
			Page / of 8 Pages	s Fages				EXNIDIT K-3	.3	

RDT&E PROGRAM ELEMENT/PROJECT COST B	COST BREAKDOWN (R-3)	VN (R-3			DATE	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603713A ADD	ND TITLE	PE NUMBER AND TITLE 0603713A ADDS-Army Data Distribution System	istribution	System	20	PROJECT D2QT
A. Project Cost Breakdown  Operational Test and Evaluation  Total	£ EY 1995	395	EY 1996 697 697	EY 1997 3781 3781			
B. Budget Acquisition History and Planning Information  Performing Organizations Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC Product Development Organizations: N/A	Total Prior to EY 1994	EY 1994	EY 1995	FY 1996	EX 1997	Budget to Complete	Total
Support and Management Organizations: N/A Test and Evaluation Organizations OPTEC MIPR Ft. Bliss, TX Government Furnished Property: None				697	3781	0	4478
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				697 697	3781 3781		4478
Pa	Page 8 of 8 Pages				Exhibit R-3	53	

RDT&E BUDGET ITEM JUS	EM JUS	TIFICAT	ION SH	TIFICATION SHEET (R-2 Exhibit)	-2 Exhib	oit)		DATE FeI	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 060	PE NUMBER AND TITLE 0603730A Tactical Surveillance System -	וודנב actical S	urveillar	ice Syste	Ę		PROJECT D560
			Ad	Advanced Development (TIARA)	evelopm	ent (TIAI	<b>3</b> 4)			
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Latimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D560 Tactical Surveillance System - Ady Dev	15140	11717	0	0	0	0	0	0	0	N/A

development efforts are under the auspices of Army's Tactical Exploitation of National Capabilities (TENCAP) program and include advanced development engineering of A. Mission Description and Budget Item Justification: This project supports advanced development work directed at meeting the deep intelligence and targeting needs of tactical commanders, as stated in Field Manual 100-5 and under Airland Battle tactics, to fight out-numbered and win. Specific tactical imagery exploitation advanced Tactical Exploitation System (TES), advanced communication technologies and processing requirements for new National sensors, prototyping efforts for Hybrid Optical Automatic Target Recognition (HOATR) image processing. This Program Element (PE) focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of TENCAP and is correctly placed in Budget Activity 4.

determined to have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the Defense Airborne Reconnaissance Program parallel action, the support efforts remaining in this PE were consolidated with Project D907 beginning in FY 96. Further details may be found in the Tactical Intelligence incorporates HOATR and Secondary Imagery Dissemination (SID)) addresses common subsystems, planned improvements, key activities and ongoing planned initiatives ETRAC) into an integrated common baseline; downsized, modular and scaleable to meet a wide range of contingency requirements. TENCAP Common Baseline (which Services Imagery Processing System (JSIPS). In FY 95, development efforts for MIES, ETRAC and JSIPS program support were moved to PE 0305154D, (DARP). In a Correlator (ETRAC) and the Modernized Imagery Exploitation Systems (MIES). The Army's emerging TES will incorporate the standards and protocols dictated by the Common Imagery Ground Surface System (CIGSS) program. TES, as a system, brings all of the existing and emerging Army TENCAP capabilities (EPDS, MIES, and (DARP) (PE 0305154D)). In FY94, this Program Element also provided advanced development efforts to the MIES and the ETRAC, and program support to the Joint Project D560 - Tactical Surveillance System Advanced Development: HOATR is being developed to meet the need to rapidly exploit an exponentially increasing volume of imagery while decreasing system size and cost, as well as lowering manning requirements. HOATR is directly applicable to the Enhanced Tactical Radar and Related Activities (TIARA) Congressional Justification Book, Volume II, and the TENCAP Master Plan.

## FY 1994 Accomplishments:

- Initiated development of the Triband Satellite System (TSS), a multi-band communication terminal supporting tactical imagery dissemination. (1614)
  - Continued development of HOATR. (1827)
- Continued development of imagery processing algorithms and DoD Common SAR Processor (CSARP) for ETRAC. (3757)
- Continued joint support within JSIPS program. (1750)
- Continued SID and low volume tactical terminals studies. (643)
- Initiated development of third MIES. (1117)

Page 1 of 7 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION	FICATION SHEET (R-2 Exhibit)	DATE February 1995	y 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT
4 - Demonstration And Validation	0603730A Tactical Surveillance System -	-	D560
	Advanced Development (TIARA)		

Continued support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace), U.S. Topographic Engineering Center (TEC) support, U.S. Army Space Program Office (ASPO) support and Contractor Systems Engineering and Technology Assistance (SETA) support. The cost identified here also supports development efforts funded under PE 0604740A, D662 in FY94 and PE 0305154D, P531 in FY 95. (4432)

## FY 1995 Planned Program:

- Upgrade ETRAC with multi-sensor capability as initial step in development of TES. (Effort funded under PE 0603766 in FY 96.) (2770)
- Complete development of HOATR (Test Prototype). (3000)
- Continue support to TENCAP program management and administrative activities (e.g., FFRDC (Acrospace), TEC support, ASPO support and SETA support. (Effort funded under PE 0603766 in FY 96.) (1373)
- Continue support to efforts being developed (ETRAC and MES) under PE 0305154D (DARP) ((e.g., FFRDC (Aerospace), TEC support, ASPO support and Contractor
- Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (236)

## FY 1996 Planned Program:

SETA support. (4338)

All effort in this project transferred/consolidated under PE 0603766 (Project D907), Tactical Electronic Surveillance System-Adv Dev

## B. Program Change Summary

EY 1996 FY 1997					0 0
	11870	11717			11711
FY 1994	15371	15371	231		15140
	Previous President's Budget	Appropriated Value	Adjustments to Appropriated Value (SBIR/STTR	Decrement)	Current Budget Submit/President's Budget

Page 2 of 7 Pages

Item 54

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	A JUSTII	CATIC	N SHE	ET (R-2	Exhibit			DATE Febr	February 1995	S .
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NUI 060: Adv	PE NUMBER AND TITLE 0603730A Tact Advanced Deve	PE NUMBER AND TITLE  0603730A Tactical Surveillance System - Advanced Development (TIARA)	urveillan ant (TIAR	ce Syste (A)	ł	ğ. O	PROJECT <b>D560</b>
Change Summary Explanation:										
CAPABILITIES (TENCAP) PROGRAM. PE 0603730A/PROJECT D560 WAS CONSOLIDATED WITH PE 0603766A/PROJECT D907 IN FY 96 AND BEYOND. AS A PART OF THIS SAME ACTION, PE 0604740A/PROJECT D662 WAS CONSOLIDATED WITH PE 0604766A/PROJECT D909 IN FY 96 AND BEYOND. AS A PART OF THIS SAME ACTION, PE 0604740A/PROJECT D662 WAS CONSOLIDATED WITH PE 0604766A/PROJECT D909 IN FY 96 AND BEYOND. These PEs/Projects were consolidated because in FY 95 all funds directly related to the development of MIES and ETRAC, and support to the JSIPS program that were previously funded in Project D560 and D662 in FY94 were moved to OSD PE 0305154D, DARP. Even though the funds have been moved to the Defense Airborne Reconnaissance Office (DARO), the Department of the Army continues to support these development efforts on their behalf. Funding to support these DARO efforts (ASPO salaries and expenses, TEC, FFRDC, Contractor SETA) and advanced development of TES and communications technologies common to all TENCAP systems remain in this PE and are still required.	TED THE R 03730A/PRC 03730A/PRC 0N, PE 0604 lated because 0 and D662 in he Departmen FRDC, Conti	EMAINING VIECT DS6 740A/PRO, in FY 95 al n FY94 wer nt of the An	G PEs SUP) O WAS CO JECT D662 I funds dire e moved to ( my continue my and advar	PORTING NSOLDAY WAS CON the related to DSD PE 030 St to support seed develop	THE ARM ISOLIDATION the development of the development of the service development of TES ment of TES	Y TACTIC PE 060376 ED WITH pment of M RP. Even tl pment effor s and comm	AL EXPLC 6A/PROJE PE 0604766 IES and ET hough the fu ts on their b unications t	ITATION O CT D907 IN APROJECT RAC, and sul mds have beer ehalf. Fundir echnologies o	F NATION FY 96 AND F D909 IN F pport to the n moved to t ng to suppor	AL Y 96 JSIPS he t these
Schedule: None										
Technical: None										
C. Other Program Funding Summary									Ę	Total
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
RDTE, A Budget Activity 4 PE 0603766A Project D907 TENCAP-AdvDev	15069	14815	28369	26913	23935	28057	29377	34319	Cont	Cont
RDTE, A Budget Activity 5 PE 0604740A Project D662 Tact Surv Sys - Eng Dev	37534	2093	0	0	0	0	0	0		
PE 0604766A Project D909 TENCAP - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28533	Cont	Cont
			Page 3 of 7 Pages	Danes				Exhibit R-2		
			10000	22.5						

RDT&E BUDGET ITEM JUST	EM JUST		FICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibit			DATE Feb	February 1995	2
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060: Adv	PE NUMBER AND TITLE 0603730A Tact Advanced Deve	FENUMBER AND TITLE 0603730A Tactical Surveillance System - Advanced Development (TIARA)	urveillan	ce Syste (A)		ğ O	PROJECT D560
	FY 1994	EY 1995	FY 1996	FY 1997	EY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
RDTE, DW Budget Activity 7 PE 0305154D Project P531 DARP	0	40017	33833	37216	12390	6328	6328	6328	Cont	Cont
Other Procurement Army, OPA - 2 BZ 7315 TENCAP BA 0329 DARP	7729 1927	4636	4617	1807	1784	1853 0	<b>4971</b> 0	14916 0	Cont	Cont
Procurement, Detense Wide 0305154D, DARP	0	0	88700	123400	77900	69100	71400	73300	Cont	Cont
D. Schedule Profile	FY 1994		E	FY 1995		FY 1996	æ	<b>14</b>	FY 1997	
	7	3 4	1 2	۳	4	7	3 4	. 7	2 3	4
Award TSS Contract Complete Development and Field TSS Test Prototype ATR Initiate Adv Dev of TES	×	v	×	××						
			Page 4 of 7 Pages	Pages				Exhibit R-2		
										73

452

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	<b>I BREAKDOW</b>	V (R-3)	٥	DATE February 1995
BUDGET ACTIVITY  4 - Demonetration And Validation	PE NUMBER AND TITLE	PE NUMBER AND TITLE ORNA730A Tactical Surveillance Svetem	Illance Sveter	PROJECT
	Advanced	Advanced Development (TIARA)	IIIalice System TIARA)	
A. Project Cost Breakdown				
	FY 1994 FY 1995	EY 1996	FY 1997	
System Development				
TES	0 2770	See Proj D907	See Proj D907	
MIES (*1)	2731		•	
ETRAC(*1)	3757			
Common Baseline (*2, *3)		See Proj D907	See Proj D907	
Sub-Total Sys Dev			•	
Program Management				
ASPO In-House (*2)	•		See Proj D907	
FFRDC (*2)	430 518	8	See Proj D907	
Systems Engineering (Contractor) (*1, *2, *4)	3995 3222		See Proj D907	
Systems Engineering (Government) (*2)			See Proj D907	
Sub-Total Program Management	6182 5947			
Total	15140 11717	0	0	

(\*1) In FY 95, all development efforts for these systems moved to PE 0305154D (DARP), Project D531

(\*2) In FY 96 and beyond, this PE/Project is consolidated under PE 0603766A (TENCAP - Adv Dev), Project D907 (Tactical Electronic Surveillance System - Adv Dev).

(\*3) TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems, including MIES and ETRAC that are funded under the Defense Airborne Reconnaissance Program (PE 0305154D) (\*4) In FY94, \$1.8M of this line funds Army's Share support to JSIPS Program Office (JPO) to support the ongoing JSIPS Program. This effort moved to PE 0305154D (DARP), Project P531 in FY 95.

Exhibit R-3

RDT&E PROGRAM ELEMENT/PROJEC	GRAM EL	EMENT/F	<b>I</b> ⊢	COST BE	BREAKDOWN (R-3)	WN (R-3			DATE	February 1	1995
BUDGET ACTIVITY 4 - Demonstration And Validation	ition And Va	lidation			PE NUMBER AND TITLE 0603730A Tact Advanced Deve	AND TITLE  OA Tactic  ed Develo	דודוב Tactical Surveillance System - Development (TIARA)	lance Sys IARA)		· L	PROJECT D560
B. Budget Acquisition History and Planning Information	ition History and	d Planning In	ormation								
Performing Organizations	izations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	EY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations	nt Organizations										
TEC (MIES)	MIPR	4094	Y/X	Y'X	A/X	1117	• •	• •	• •		
(ETRAC)	MIFK	Ŝ,	<b>V</b>	<b>₹</b>	2320	3757	•	•			
MICOM(Cmn Beln)	MIPR	3Q94	N/A	V/N	N/A	1827	3000	*	:		
Classified (Cmn	MIPR	1094	N/A	N/A	N/A	643	0	<u>.</u> 0	0		
Classified (TES)	MIPR	2095	N/A	Y/Z	<b>Y</b> / <b>X</b>	0	2770	:	:		
Support and Management Organizations	ement Organizati	ions									
ESC (JSIPS Sys	MIPR	4094	N/A	Y/X	N/A	1750	•	•	•		
Eng Cont) Classified (Sys	MIPR	1Q EA FY	N/A	X/X	Y/X	2245	3222	*	:		
Eng Cont)	1-11	• •	777	****		t		;	;		
SSD/FDEA	MIPR	1Q EA FY	₹ <b>₹</b>   <b>₹</b>	₹ ₹ Ž	4 4 2 2	430	120/ 518	: :	: :		
(FFRDC) TEC (Sys Eng Govt)	MIPR	1Q EA FY	N/A	Y/X	N/A	550	1000	:	*		
				Pagi	Page 6 of 7 Pages	S			Exhibit R-3	<b>તે-3</b>	

454 UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT	GRAM EL	EMENT/F		COST BF	REAKDC	BREAKDOWN (R-3)			DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	tion And Val	lidation			PE NUMBER 0603730 Advanc	PE NUMBER AND TITLE 0603730A Tactic Advanced Develo	PE NUMBER AND TITLE 0603730A Tactical Surveillance System - Advanced Development (TIARA)	lance Sys	l	-	РРОЈЕСТ <b>D560</b>
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle Test and Evaluation Organizations	Contract Method/Type or Funding Vehicle Organizations	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Government Furnished Property	hed Property										
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Delivery Date		Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property	nt Property										
Triband SATCOM Subsystem (TSS) (MIES)	MIPR	3Q94	3Q95		0	1614	0	0	0	0	1614
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Subtotal Government Furnished Property Total Project	velopment I Management aluation t Furnished Prop	xerty			X X 0 X X X X X X X X X X X X X X X X X	7344 6182 0 1614 15140	5770 5947 0 0 0	::00:	::00;		
* See PE 0305154, P531	•531 , D907										
				Page	Pare 7 of 7 Pages	91			Exhibit R-3	6-3	

RDT&E BUDGET ITEM JUS	EM JUS	TIFICAT	ION SE	TIFICATION SHEET (R-2 Exhibit)	-2 Exhit	oit)		DATE Fel	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI OGC	PE NUMBER AND TITLE  0603745A Tactical Electronic Support Systems Advanced Development (TIARA)	ritle Factical l evelopm	Electroni ent (TIAF	c Suppor	rt System		PROJECT <b>D535</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D535 Intelligence Fusion Analysis Demonstration	4296	1695	2937	2096	0	0	0	0	0	17261

intelligence processing system through technology insertion into, and development and evaluation of, prototype upgrades to the All Source Analysis System (ASAS), both A. Mission Description and Budget Item Justification

This Program Element funds application and validation of advanced computer software and hardware technologies to intelligence fusion analysis functions and prototype development, integration and evaluation of improved tactical intelligence fusion capabilities. This project supports the urgent requirement for an automated tactical during development and after fielding and is appropriately funded in Budget Activity 4.

# Project D535 - Intelligence Fusion Analysis Demonstration.

## FY 1994 Program Accomplishments:

- operational prototypes; expanded capabilities of techbase prototypes, to include image processing, support to collection management and Human Interest (HUMINT) Completed basic prototypes of high-performance, parallel processor based terrain analysis and data fusion servers; initiated evaluation and configuration of techbase prototypes for terrain analysis, advanced correlation, asset management, situation assessment and templating capabilities for use as/incorporation into ASAS analysis. (696)
- Continued to support the general development, integration and evaluation of operational prototypes of functional and performance upgrades to ASAS in accordance with the US Army Intelligence Center and School/PEO-CCS/USAREUR Joint Prototyping Plan; continued to integrate and evaluate advanced fusion technology applications to ASAS at the Tactical Intelligence Fusion Test Bed. (2000)
  - Supported the completion of development, integration and evaluation of operational prototypes to upgrade:
- (1) the selection, transformation and dissemination of ASAS intelligence fusion products to other command and control systems
- (2) the reception and incorporation of other command and control systems' products and information into ASAS intelligence fusion operations. (1600)

## FY 1995 Planned Program:

- Continue to expand and improve the capabilities and performance of the techbase prototypes to include dynamic situation change prediction, expanded collection management support/synchronization, matrix generation, advanced image processing, incorporation of terrain and mobility analysis techniques in automated correlation, and tailored support to intelligence analysis in low intensity conflicts and operations other than war. (494)
- Continue to evaluate and configure techbase prototype situation display/assessment, collection management support and HUMINT/Counter-Intelligence analysis support capabilities for employment as/integration into operational prototypes of ASAS functions for user evaluation and feedback. (294)

Page 1 of 6 Pages

4

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 1995
BUDGET ACTIVITY P	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603745A Tactical Electronic Support Systems	
	Advanced Development (TIARA)	
A transmittee has anitariform anitometric framework and transmit of entities of	and settinement throad on user feadback) of menational prototones of functional and nerformance	norformance

- Continue to support the development, integration, evaluation and retinement (based on user feedback) of operational prototypes of nunctional and performance improvements to ASAS per the Joint Prototyping Plan. (871)
- Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (36)

## FY 1996 Planned Program:

- development, assessment and prediction; intelligence collection planning, management, and evaluation; advanced intelligence analysis and correlation tools for lowdatabase techniques, improved storage media) to intelligence fusion techbase prototypes for expanded capabilities and performance in the areas of dynamic situation Continue to investigate, develop and apply advanced technologies (neural net software and hardware, large-screen displays, parallel/distributed processing and and high-intensity conflict situations and operations other than war. (875)
  - Continue to evaluate, configure and integrate the above high-performance, expanded techbase prototype capabilities into operational ASAS prototypes. (647)
- Continue to support the development, evaluation and refinement of operational prototypes of functional and performance upgrades/improvements to ASAS and their integration into mainline ASAS development and acquisition per the Joint Prototyping Plan. (1415)

## FY 1997 Planned Program:

- Continue to investigate, develop and apply advanced software and hardware processing, storage, display and Input/Output (I/O) technologies to techbase prototypes of high-performance, expanded intelligence fusion capabilities. (546)
  - Continue to evaluate, configure and integrate techbase prototype capabilities into operational ASAS prototypes. (552)
- Continue to support the development, evaluation and refinement of ASAS operational prototypes and their integration into mainline ASAS development and acquisition per the Joint Prototyping Plan. (998)

	2952 2106				2937 2096
	1718	1695			1695
FY 1994	4363	4363	19-		4296
B. Program Change Summary	Previous President's Budget	Appropriated Value	Adjustments to Appropriated Value	SBIR/STTR decrement (-67)	Current President's Budget

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	I SHEET (R-2	Exhibit)		DATE February 1995	1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE  0603745A Tactical Electronic S Advanced Development (TIARA)	TILE actical Ele evelopment	PENUMBER AND TITLE 0603745A Tactical Electronic Support Systems Advanced Development (TIARA)	t Systems -	PROJECT D535
Change Summary Explanation (By Project):					
Project D535 - Intelligence Fusion Analysis Demonstration Funding: None Schedule: None Technical: None					
C. Other Program Funding Summary				F	To
Not Applicable	EY 1996 FY 1997	FY 1998 E	EY 1999 FY 2000	EY 2001 Compl	
D. Schedule Profile FY 1994	FY 1995		FY 1996	FY 1997	•
sic Terrain Analysis Prototypes sic Asset Mgmt Techbase		<del>-</del>	2 C	5	4
Prototypes Integrate Asset Mgmt into ASAS BL II Prototymes	•				
Integrate Adv Sit Assmt into ASAS  Operational Prototrue	×				
Integrate HUMINT Anal Spt into ASAS		×			
Incorporate Adv Correlation Techniques into ASAS Operational Prototypes		×			
Apply Adv Processing Tech into Techbase Prototypes			×		
Pa	Page 3 of 6 Pages			Exhibit R-2	
	458				Item 55

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603745A Tactical Electronic Support Systems - Advanced Development (TIARA)	port Systems -
Integrate Exp Techbase Capabilities into ASAS Operational Prototypes Apply Adv Tech to Techbase Prototypes Integrate Exp Techbase Capabilities into Operational ASAS Prototypes	FY 1995 2 3 4 1 2 3	FY 1997 X X X X X
Page	Page 4 of 6 Pages	Exhibit R-2

RD	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM ELI	EMENT/PR	<b>DJECT</b>	SOST BE	REAKDO	WN (R-3		DATE	Eshmen, 100K	
8UDGET ACTIVITY 4 - Demonstr	subget Activity 4 - Demonstration And Validation	lidation			PE NUMBER AND TITLE 0603745A Tact Advanced Deve	SAND TITLE  SA Tactic  ed Develc	PENUMBER AND TITLE 0603745A Tactical Electronic S Advanced Development (TIARA)	Tactical Electronic Support Systems Development (TIARA)	ort Syster		PROJECT D535
A. Project Cost Breakdown	Breakdown										
Prototype Development Efforts Total	oment Efforts			FY 1994 4296 4296		FY 1995 1695 *1695	FY 1996 2937 2937	FY 1997 2096 2096			
*SBIR/STTR (36)											
B. Budget Acqui	B. Budget Acquisition History and Planning Information	1 Planning In	formation								
Performing Organizations	ınizations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	EY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Tetal Program
Product Developm JPL Support and Mana	Product Development Organizations JPL Support and Management Organizations	ions			6237	4296	1695	2937	2096	0	17261
Test and Evaluation Organizations	on Organizations										
Government Furnished Property	nished Property										
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Delivery <u>Date</u>		Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property	ent Property			Page	Page 5 of 6 Pages	S			Exhibit R-3	3	
					460						Item 55
				ONC	UNCLASSIFIED	۵					
1					•						

RDT&E PROGE	SAM ELI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BF	REAKDO	WN (R-3		DATE F	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	idation		0603745A Tact Advanced Deve	oe number and TITLE O603745A Tactical Electronic S Advanced Development (TIARA)	al Electro pment (T	oe03745A Tactical Electronic Support Systems - Advanced Development (TIARA)	ort Syste		РRОЈЕСТ <b>D535</b>
Contract Method/Type Item or Funding Description Vehicle	Award or Obligation Date	Delivery Date	Total Prior to EY 1994	FY 1994	EY 1995	FY 1996	EY 1997	Budget to Complete	Total Program
Support and Management Property									
Test and Evaluation Property									
			Total Prior to	FV 1994	FV 1995	FV 1995	FV 1907	Budget to	Total
Subtotal Product Development Subtotal Support and Management			6237	42%	1695	2937	2096	anal distriction of the state o	17261
Sucroval 1 est and Evaluation Total Project 'SBIR/STTR (36)			6237	4296	<b>*</b> 1695	2937	2096		17261
									-
		Pa	Page 6 of 6 Pages	s			Exhibit R-3	£:	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	HS NOI	IEET (R	2 Exhib	it)		DATE <b>Fel</b>	February 1995	95
8UDG1	BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 060	PE NUMBER AND TITLE  0603747A Soldier Support/Survivability	TTLE Soldier St	S/Juoddr	ırvivabili	ty		
	COST (in Thousands)	f. 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	11720	11636	33848	18481	9105	9658	9731	9470	Continuing	Continuing
8000 0000	DC09 Unlt/Organizational Equipment	2817	1976	2241	1362	2891	1839	1597	1565	Continuing	Continuing
<b>D903</b>	D603 Enhanced Land Warrior	0	5458	25835	E9 <del>11</del> 6	0	0	0	0	0	8
D <b>8</b> 10	D610 Food Advanced Development	7284	2142	2162	2136	2511	2880	3407	3791	Continuing	Continuing
D969	D669 Clothing and Equipment	9099	2080	3510	3631	3703	3777	4637	4114	Continuing	Continuing

A. Mission Description and Budget Item Justification Provide advanced development for unit/organizational equipment, improved individual clothing and equipment, fabric shelters, food, food and field service equipment which will enhance soldier battlefield effectiveness, survivability, sustainment and quality of life. Program element supports advanced development of a new generation of field service support items and shelters, including collective protection and shelter heaters for unit/organizational use. Program element also supports advanced development of individual clothing and equipment items to lighten the soldier's load and incorporate protection against chemical and biological agents, thermal nuclear flash, ballistic threats, visual and electronic detection and environmental hazards. Enhanced Land Warrior supports advanced development of the first fully integrated and digitized combat soldier system. The projects in this Program Element support research efforts in the Demonstration and Validation phases of the acquisition strategy and are therefore correctly placed in Budget Activity 4.

Project DC09 - Unit/Organizational Equipment Advanced Development: Develop and field soft shelters, showers, latrines and heaters to improve unit sustainability and combat effectiveness

## FY 1994 Accomplishments:

- Completed advanced development and transitioned the 35k British Thermal Unit-Heat (BTUH) Space Heater Convective (SHC) to Engineering and Manufacturing Development. (440)
- Fabricated developmental prototypes for the 10k BTUH Space Heater Small (SHS) and Space Heater Arctic (SHA). (320)
- Performed market investigation and fabricated Lightweight Maintenance Tent prototypes for field unit evaluation. (164)
- Initiated market investigation and fabricated Modular Ammunition Solar Shade (MASS) test prototypes for evaluation at the Ordinance Missile Munitions School and Center and the National Training Center (NTC). (180)
- Shipped 160 MASS Covers to Somalia for general purpose solar protection and evaluation. (13)
- Completed contractor development of prototype Laundry and Drycleaning System (LADS). (1500)

Page 1 of 15 Pages

Exhibit R-2

RDT&E BUDGET ITEM JU	STIFICATION SHEET (R-2 Exhibit)	DATE February 1995	2
BUDGET ACTIVITY	PE NUMBER AND TITLE		
4 - Demonstration And Validation	0603747A Soldier Support/Survivability	,	
FY 1995 Planned Program:			

- Complete design and initiate testing of Quarter Acre and Ammo Solar Shades. (267)
- Complete 1 edesign of the Lightweight Maintenance Enclosure and procure prototypes. (603)
- Complete market investigation and Integrated Program Summary (IPS) for the Ballistic Protective System. (149)
  - Conduct contractor testing and redesign of the Laundry and Dry Cleaning System (LADS). (293)
- Complete Dem/Val of the Space Heater Convective (SHC) and the Space Heater Arctic (SHA) and transition to Engineering and Manufacturing Development. (243)
  - Conduct market investigation, build prototypes, test and transition to Engineering and Manufacturing Development the Containerized Self Service Laundry. (379)
    - SBIR/STTR Adjustment (42)

#### 1996 Plansed Program: 7

- Complete development and type classify Ammo Solar Shade and procure Quarter Acre Solar Shade prototypes. (371)
- Procure test prototypes for the Ballistic Protective System and transition to Engineering and Manufacturing Development. (220)
- Complete technical testing of the Lightweight Maintenance Enclosure and transition to Engineering and Manufacturing Development. (550)
  - Build three second generation LADS for Technical Testing/Operational Testing (TT/OT). (962)
- Complete development of the SHS and transition to Engineering and Manufacturing Development. (138)

## FY 1997 Planned Program:

- Complete development and type classify the Quarter Acre Solar Shade. (233)
- Complete LADS prototype systems and initiate TT/OT. (1129)

use. The backbone of LW will be the radio/computer/Global Positioning System (GPS) and the head mounted display. The LW program will leverage Nondevelopmental Items (NDI) components, whenever possible, to provide state-of-the-art digitized technology. LW will also incorporate/integrate equipment from ongoing RDA programs, dismounted combat soldiers. LW program is focused to keep pace with the Army Digitization effort and is critical to the digitization of the soldier system to support the infantryman's lethality, command and control, mobility, sustainment and survivability. The program encompasses everything the soldier wears or carries for individual D603 - Enhanced Land Warrior: The Enhanced Land Warrior (ELW) program strategy is structured for the continuous modernization of all soldiers. Land Warrior Force XXI Concept and the Chief of Staff of the Army's initiative to field an operational digitized force by the year 2000. LW will incorporate mature technologies (LW) for dismounted combat soldiers is the lead program and the technology carrier for the ELW program. LW is a first generation, integrated soldier system for demonstrated in the Soldier Integrated Protective Ensemble (SIPE) and other RDT&E capabilities by government and industry. LW will enhance the dismounted where appropriate. Less mature technologies not available for acquisition in LW will be demonstrated in the 21st Century Land Warrior (21CLW) Top Level Demonstration (TLD) and then transition to 21CLW development.

## FY 1994 Accomplishments:

Project not established until FY 95. Work performed under D669 in FY94

Exhibit R-2

Page 2 of 15 Pages

RDT&E BUDGET ITEM JUSTIFICATION 8	IFICATION SHEET (R-2 Exhibit) PATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE
4 - Demonstration And Validation	0603747A Soldier Support/Survivability
FY 1995 Planned Program:	

- Complete engineering analysis, complete Request for Proposal (RFP), and conduct Source Selection for LW Contract Award. (3694)
  - Preliminary Design of Land Warrior System and Land Warrior contract award (1500)
    - Support Battlelab Advanced Warfighting Experiment (AWE) Warrior Focus. (150)
      - SBIR/STTR Adjustment (114)

## FY 1996 Planned Program:

- Buy prototype components of Helmet Mounted Display, Digital Radio, Voice Soldier Radio and Lightweight Leader Computers and integrate for squad to company size Early User experimentation and conduct EOE testing for LW program. (2800)
  - Complete LW system hardware/software design and integration; conduct contractor testing of components and technical reviews. (18750)
    - Program management: scheduling, program controls, program documentation, and review of performance, cost and schedule. (1800)
      - Buy long lead items for LW Development Test (DT). (300)
- Review of LW contractor's performance, to include system analysis, government configuration management, software verification, and logistics support (matrix support from 12 organizations). (2285)

## FY 1997 Planned Program:

- Fabricate LW prototypes for DT. (5000)
- Support Brigade 96 AWE and company size FDTE for LW. (3500)
- Program management and government oversight of effort. (953)

Engineering Board as part of the Joint Service Food Program. Conduct Advanced Development of improved subsistence and subsistence support items to enhance soldier service, utilize battlefield fuel and decrease fuel and water requirements. Program is reviewed and validated twice annually by the DoD Foou and Nutrition Research and rapidly deployable field food service equipment to support combat, humanitarian missions and operations-other-than-war. Improve equipment to enhance safety in food logistics burden and O&S costs of subsistence support for servicemen and women. Enhance rations by increasing quality, acceptability and variety. Develop multi-fuel, effectiveness and quality of life in all four Services as part of an integrated DOD Food Research, Development, Test, Evaluation and Engineering (RDTE&E) program. Project D610 - Food Advanced Development: Development of Joint Service Food/Food Service Equipment to improve individual combat effectiveness and reduce

## FY 1994 Accomplishments:

- Procurement documents were transitioned to Defense Personnel Supply Center for the Unitized Group Ration (UGR) which simplifies logistics and integrates heat and serve meals, and meals prepared by cooks, that were developed, field tested, and independently validated. (466)
  - prototype powered multi-fuel burner for field food preparation that will improve operational efficiency, sustainment cape, bility and safety by replacing gasoline fueled Initiated design and development of improved field food service refrigeration to eliminate ozone depleting chemicals, and awarded contracts for the development of burners. (510)
- Evaluated NDI components of a galley system designed for extended operations aboard Navy P-3 sub-chaser aircraft. (168) Page 3 of 15 Pages

UNCLASSIFIED



**Exhibit R-2** 

## February 1995 DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE

4 - Demonstration And Validation

0603747A Soldier Support/Survivability

- Conducted market survey and user survey to evaluate capability requirements for Army Field Feeding System Future for soldiers operating in extreme cold
- Assembled Long Range Patrol prototype with vacuum pack entrees and conducted focus group evaluations with Special Operations Forces troops. (320)
- that complies with current Food and Drug Administration/United States Department of Agriculture labeling regulations and developed a prototype nutrition insert for Developed and tested new recipes for the Armed Forces Recipe Service. Developed a nutritional labeling concept in conjunction with Office of The Surgeon General inclusion in operational rations. (645)

## FY 1995 Planned Program:

- Conduct user test/evaluation of prototype powered multi-fuel burners and improved field food service refrigeration, and transition multi-fuel burner to engineering development. (570)
- Complete development and transition Technical Data Package (TDP) for UGR and Joint Service nutritional labeling to the Defense Logistics Agency for procurement and fielding. (160)
- Complete development and transition improved Long Range Patrol Ration, improved Tray Pack Ration and improved Cold Weather Ration to procurement. (651)
  - Complete test and evaluation of galley improvements aboard Navy P-3 sub-chaser aircraft and transition to Navy for production. (180)
- Complete preliminary automation requirements to automate the Joint Service Recipe System to eliminate duplication of efforts between Services and provide real time recipe revisions and nutritional analyses to field activities. (475)
- Evaluate new and modified equipment components of the Army Field Feeding System-Future to provide improved food service operations and performance in cold and extreme cold environments. (61)
- SBIR/STTR Adjustment (45)

## FY 1996 Planned Program:

- Conduct user evaluation of hardware/software developed to automate the Joint Service Recipe System. (703)
  - Complete design and transition TDP for improved field food service refrigeration to procurement. (150)
- Develop, conduct user evaluations, and transition Tray Pack and Meal-Ready-To-Eat improvements to procurement. (609)
- Conduct user tests of new self-heating group ration to increase readiness, ease logistical burden, reduce labor and decrease costs. (312)
  - Conduct market and user surveys of biodegradable packaging for operational subsistence. (95)
- Conduct user tests of new self-heating individual ration that will increase convenience, consumption, and field troop quality of life. (293)

## FY 1997 Planned Program:

- Transition first generation automated system for the Joint Service Recipe System to the service's field activities. (431)
- Develop, conduct user evaluations, and transition Tray Pack and Meal-Ready-to-Eat improvements to procurement. (657)
  - Conduct user tests of self-heating group ration. (250)
- Conduct user evaluations of biodegradable materials for ration packaging. (383)

Conduct user tests of a new self heating individual ration. (315)

Page 4 of 15 Pages

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

**BUDGET ACTIVITY** 

0603747A Soldier Support/Survivability PE NUMBER AND TITLE

February 1995

DATE

4 - Demonstration And Validation

Initiate design/development of prototype compactor/pulper for field food service use to reduce back-haul and trash burial requirements. (99)

Project D669 - Clothing and Equipment: Uses state-of-the-art technology to develop improved clothing and individual equipment items to enhance the effectiveness,

## FY 1994 Accomplishments:

lethality, sustainability, survivability and quality of life of the individual soldier.

- Prepared program documentation and achieved Milestone I Program Decision for Land Warrior (1500)
- Completed Concept Formulation Process for Land Warrior. (800)
- Prepare Draft Land Warrior Request for Proposal for FY 95 release. (1538)
- Modified requirements, program management plans, and test plans for the Microclimate Cooling Air Vest (to support PM-Aircrew Life Support Equipment) from cooled air to cooled liquid vest per change in Joint Service requirements). (57)
- Held In-process Review of proponency, requirements, technology and initial design concepts for the Individual Microclimate Cooling System; conducted Red Team survey and analysis of potential Army applications; provided demo to potential users. (642)
  - Reviewed data for flechette and fragment protection of the Multiple Threat Body Armor (MTBA); reviewed results of Front End Analysis for a Modular Body Armor (MBA) system; determined that MTBA requirements would be met in a new MBA requirement. (46)
- Procured test items and initiated DT/OT of the Self-Contained, Toxic Environment Protective Outfit (STEPO). Following Phase I of DT/OT, made decision to correct equipment problems before proceeding with Phase II DT/OT. Awarded contract for fixes. (2226)

## FY 1995 Planned Program:

- Assist TRADOC in revising requirements documents for the Individual Mircoclimate Cooling System, using Red Team survey and demonstration to potential users.
- Complete modifications of the Self-Contained Toxic Environment Protective Outfit (STEPO) test items, conduct equipment prove-out, conduct New Equipment Training, and complete Phase II DT/OT. (1839)
  - PM Aircrew Life Support Equipment is funding Liquid Microclimate Cooling Vest.
- Reprogramming. (28)
- SBIR/STTR Adjustment (43)

## FY 1996 Planned Program:

- Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Individual Microclimate Cooling System (revised requirement), Advanced Personal System for Ground Troops (PASGT) Helmet, Advanced Explosive Ordnance Disposal (EOD) Suit, Special Protective Eyewear Cylindrical System (SPECS) P31. (3210)
  - Complete test assessment reports, type classify, complete Technical Data Package and transition to production: STEPO. (300)

Page 5 of 15 Pages

Exhibit R-2

Item 56

466

UNCLASSIFIED

RDT&E BUDGET ITEM JUST	IFICATION SHEET (R-2 Exhibit) DATE Februs	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603747A Soldier Support/Survivability	
FY 1997 Planned Program:		

- Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Variable Battledress Uniform, Heat Pipe Heating System, Reversible Absorption Microclimate Cooling System, Technologies to support a 21st Century STEPO. (1411)
- Procure test items and initiate and/or complete DT/OT 1: Advanced PASGT Helmet, Advanced EOD Suit, SPECS P31. (2120)

	Previous President's Budget 11795		Adjustments to Appropriated Value	a. SBIR/STTR (-204)	b. Reprogramming total (-1252)	Budget 11720 1
FY 1996	11869	36				1636 33848
Y 1997	7508					16481

Milestone I/II in August 1994, and was then funded during the FY 96-01 POM development cycle. Funding provides for the completion of LW hardware/software design Funding: Increase in FY 96 and FY 97 to support new Project D603 for the Land Warrior (LW) program. Program was not fully structured until after the completion of and integration, fabrication/procurement of prototypes and the conduct of Early Operational Experimentation(EOE) and Development Testing.

Schedule: Unchanged, but is contingent upon receipt of FY 96/97 funding.

Technical: Unchanged

4 - Demonstration And Validation  cost (in Thousands)  FY 1994 Actual			•		•			のスター ときこうりょ	50
FY 16 Actu		PE N.	PE NUMBER AND TITLE 0603747A Sold	Soldier Support/Survivability	ipport/Su	ırvivabili		ā 0	PROJECT DC09
	FY 1905	FY 1988 Estimate	FY 1997 Estimate	FY 1906 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	2817 1978	2241	1362	2867	1939	1507	385	Continuing	Continuing
C. Other Program Funding Summary  EY 1994  OPA3 LADS-SSN M86200	994 EY 1995	EY 1996	EY 1997	EY 1998	EY 1999 4062	EY 2000 4474	EY 2001	Complete To	Total Cost 8536
D. Schedule Profile FY 1994	1994	E ~	FY 1995	-	FY 1996	<b>9</b> "	-	FY 1997	
Completed contractor development of prototype LADS Completed advanced development of 35k BTUH Space Heater Convective (SHC) Complete demonstration/validation of SHC and Space Heater Arctic (SHA) Complete redestign of Lightweight Maintenance Tent Type Classify Solar Shade Ammunition Covers Type Classify Quarter Acre Solar Shade Complete LADS prototype systems and Initiate TT/OT	· *		•	· ×		• · ×	-		* × ×
		Page 7 of 15 Pages	Papes				Exhibit R-2	2	



RDT&E PROGRAM ELEMENT/PRO	ROJECT COST	COST BREAKDOWN (R-3)	WN (R-3		DATE	February 1995	968
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AN 0603747A		TITLE Soldier Support/Survivability	/Survivab			PROJECT DC09
A. Project Cost Breakdown		1004	7001 A2	2001 /22			
Primary Hardware Development Total	2617 2617 2617	1976 1976	2241 2241 2241	1362 1362 1362			
B. Budget Acquisition History and Planning Information							
Performing Organizations Contractor or Contract							
Method/Type Award or Performing or Funding Obligation Activity						Budget to	Total
Activity Vehicle Date EAC	EAC FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Chemfab, Hunter Mfg, Atlantic	N/A* 10230	2352	1711	1784	1187	Cont	Cont
Page Page Page Page Page Page Page Page							
Services							
and Mana	•	;	•	,	,	1	
Soldier Systems Command   Test and Evaluation Organizations	1000	250	113	200	901	Cont	Cont
TECOM	2000	15	150	260	75	Cont	Comt
• DC09 Program line is ongoing in nature, and is made up of multiple projects which are on separate project schedules, as a result, the EAC, Budget to Complete and Total Program Categories are not applicable to DC09.	projects which are o	n separate proje	ect schedules,	as a result, th	e EAC, Budg	get to Comple	te and
Government Furnished Property: N/A	,						
	Total Prior to					Budget to	Total
Subtotal Product Development	EY 1994	EY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Subtotal Support and Management	1000		115	200	100	Cont	Cont
Subtotal Test and Evaluation	2000	15	150	260	75	Cont	Cont
	Page R of 15 Pages		2		Exhibit R.3		3
	469						Item 56
	101						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE	February 1995	9
BUDGET ACTIVITY 4 - Demonstration And Validation			PE N.	PE NUMBER AND TITLE 0603747A Sold	me oldier St	राताह Soldier Support/Survivability	invivabili			PROJECT D603
COST (in Thousands)	FY 1984 Actual	FY 1905 Eedimate	FY 1906 Estimate	FY 1907 Estimate	FY 1998 Estimate	FY 1900 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
D803 Enhanced Land Warrior	0	95 <del>8</del> 5	22835	25	0	0	0	0	0	8
C. Other Program Funding Summary	EY 1994	3	EY 1996	EY 1997		EY 1999	FY 2000	EY 2001	Compl	Total
RDIE, A Budget Activity 5 PE 0604713A RDTE, A Budget Activity 4 PE 0603747A/D669	3768*	<b>4</b>		52239	34761	23610	18129	25496	Cont	Cont 5864
OPA3, M80500 Enhanced Land Warrior WTCV, GZ2800 Mod Wpn Sys (M16/M203) WTCV, GB3007 Mod Wpn Sys - M4 Carbine Mod	2024	639	2 <b>842</b> 930	<i>5767</i> 2206	8081 2287	52342 7559 2524	52479	63304	131022	299147 26912 7947
*Note: Land Warrior was a portion of Project D669 within PE 0603747A.	9 within PE	0603747A.								
D. Schedule Profile	FY 1994	,	Ŀ	Y 1995		FY 19	<b>%</b>		FY 1997	
ORD Ammood	2 3 ×	<b>~</b> *	1 2	2 3	4	2 3	3 4	-	2 3	4
Milestone I/II Decision	ξ	*		;						
Fabricate Development Test Prototypes				×				×	×	
			Page 9 of 15 Pages	Pages				Exhibit R-2	2	
										14.m. E.C.



7

RDT&E PROGRAM ELEMENT/PROJEC	ROJECT COST BREAKDOWN (R-3)	EAKDO	WN (R-3		DATE Fe	February 1995	96
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603747A Sold	AND TITLE	r Support	Soldier Support/Survivability	lity	٥	PROJECT D603
down gram Management lion and Manufacturing	FY 1994 FY	FY 1995 5194 150	FY 1996 22835 2800 300	FY 1997 953 3500 5000			
Total  B. Budget Acquisition History and Planning Information		114 5458	25935	9453			
Performing Organizations  Contractor or Contract  Government Method/Type Award or Performing Project  Performing or Funding Obligation Activity Office  Activity Vehicle Date EAC EAC	Total Total & Prior to EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
To be determined Support and Management Organizations Soldier Systems Command			3694	18750	5000		
<u>.</u>			150	2800	3500		
Government Furnished Property  Contract  Method/Type Award or  Item or Funding Obligation Delivery  Description Vehicle Date  Product Development Property	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Thermal Weapons Sight Support and Management Property: None Test and Evaluation Property: To be determined	800	009	9				1360
	Pare 10 of 15 Pares	ડ			Exhibit R-3	2-3	
							Item S6

RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	EAKDO	WN (R-3		DATE	February 1995	88
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603747A Sold	AND TITLE	r Support	Soldier Support/Survivability			
	Total Prior to					Budget to	Total
Subtotal Product Development	FY 1994 800	FY 1994 600	FY 1995 60	FY 19%	FY 1997	Complete	Program 1360
Subtotal Support and Management Subtotal Test and Evaluation							
Total Project	800	009	8				1360
Pag	Page 11 of 15 Pages	23			Exhibit R-3	7-3	
							Item SA

Item 56

472 UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit	(1		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU	PE NUMBER AND TITLE 0603747A Sold	TILE Soldier St	TITLE Soldier Support/Survivability	ırvivabili		E 0	PROJECT D610
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D610 Food Advanced Development	2284	2142	2162	2135	2511	2880	3497	3791	Continuing	Continuing
C. Other Program Funding Summary: N/A										
D. Schedule Profile	FY 1994		įr.	FY 1995		FY 19	%		FY 1997	
-	2 3	4	1 2	6	4 1	2 3	3 4	-	2 3	4
Initiated development of improved field										
food service refrigeration		×								
Developed Unitized Group Ration (UGR)		×								
Complete development of unproved Long   Range Patrol Ration Tray Pack Ration					×					
and Cold Weather Ration					<b>;</b>					
Automate Joint Service Recipe System					×					
Conduct user tests of self-heating group							i			
ration							×			
Transition tray pack and MRE										>
improvements to procurement										×
Conduct user tests of biodegradable										>
materials for ration packaging										<
			Page 12 of 15 Pages	5 Pages				Exhibit R-2	ç	

ROT&EP	ROGI	SAM ELE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT C	OST BE	REAKDO	WN (R-3	(	DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	Ind Val	dation			PE NUMBER AND TITLE 0603747A Sold	AND TITLE	r Support	Soldier Support/Survivability	lity	E 0	PROJECT D610
A. Project Cost Breakdows				700			200	1			
Primary Hardware Development Total	ment			2294 2294 2294	L	2142 2142 2142	FT 1996 2162 2162	2135 2135 2135			
B. Budget Acquisition History and Plauning Information	ttory and	Planning Inf	ormation								
Performing Organizations Contractor or Contract	_ ប្ត										
	Method/Type	Award or	Performing	Project	Total						Ę
Activity Vehicle	ic Sum Si	Ostigation Date	ACIVITY	Cinæ EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	l otal Program
Developmen	anization										
Natick, GEO Centers, Hunter Mfg	Ę,		• <b>Y</b> / <b>Z</b>	N/A•	7940	2176	1794	1814	1792	Cont	Cont
Support and Management Organizations	Organiz	ations			<b>37</b>	113	801	901	101		
3	nizations				2	3		901			
TECOM					730	8	240	240	236		•
Government Furnished Property: N/A	operty:	<b>4</b> /7									
Subtotal Product Development	Ę				7940	2176	1794	1814	1792	Cont	Cont
Subtotal Support and Management	gement				456	113	108	108	107		
Subtotal Test and Evaluation	<b>E</b>				730	so.	240	240	236		
Total Project					9126	2294	2142	2162	2135		
<ul> <li>D610 program line is ongoing in nature and is made up of multiple low cost projects which are on separate, staggered project schedules, as a result EAC, Budget to Complete, and Total Program Categories are not applicable</li> </ul>	going in n m Catego	ature and is mries are not ap	sade up of multip pplicable	le low cost pr	ojects which	are on separa	ite, staggered	project schedu	ıles, as a resu	ılt EAC, Budş	ed to

Page 13 of 15 Pages 474

Item 56

Exhibit R-3



RDT&E BUDGET ITEM JUSTI	M JUST	FICATI	SN SHE	ET (R-2	FICATION SHEET (R-2 Exhibit)	<b>a</b>		DATE Fet	February 1995	560
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NL 060	PE NUMBER AND TITLE 0603747A Sold	Soldier Support/Survivability	S/Juoddr	ırvivabili		4 0	PROJECT <b>D669</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D669 Clothing and Equipment	6089	2080	3510	3531	3703	3777	4637	4114	Continuing	Continuing
C. Other Program Funding Summary OMA PROCUREMENT	FY 1994	EY 1995 2890	EY 1996 7050	EY 1997 5960	FY 1998 6130	FY 1999 6130	FY 2000 6020	EY 2001 6020	Compl Cont	Total Cost
D. Schedule Profile  Complete Phase I DT/OT of STEPO Complete Equipment Modifications of STEPO Complete Phase II of DT/OT and Assessment Reports Type Classify STEPO Revise Requirement of Individual Microclimate Cooling (IMC) Downselect Design of IMC Complete DT/OT of IMC Complete Early User Evaluation of Advanced EOD Suit Mod Design and Complete DT/OT of Advanced EOD Suit	st o	FY 1994 2 3	<b>▼</b> *	FY 1995 X	395 4 X	E ~ ×	7.19% X	<b>→</b> ×	FY 1997 2 3	<b>→</b> ×
			Page 14 of 15 Pages	5 Pages				Exhibit R-2	2	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT CO	ST BREAKE	<b>JOWN (R-3)</b>	DATE	February 1995	
BUDGET ACTIVITY 4 - Demonstration And Validation	9	PE NUMBER AND TITLE 0603747A Sold	Soldier Support/Survivability	Survivability	PROJECT D669	5 _
A. Project Cost Breakdown	75	70 A	7001	. A. C.		
Clothing and Equipment Total	6803 6809	2060 2060 2060	71 1996 3510 3510	FT 1997		
B. Budget Acquisition History and Planning Information. N/A						-
	Page 15	Page 15 of 15 Pages		Exhib	Exhibit R-3	
		476			Item	Item 56
	UNCL	UNCLASSIFIED			(	

RDT&E BUDGET ITEM JUSTI	EM JUS	TIFICA	TION SE	IEET (R	'IFICATION SHEET (R-2 Exhibit)	)tt)		DATE Fe	February 1995	395
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 06(	PE NUMBER AND TITLE 0603760A Distr Advanced De	ENUMBER AND TITLE  D603760A Distributive Interactive Simulations  Advanced Development	ve Intera	ctive Sin	ulations		PROJECT DC80
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to	Total Cost

reconfigurable simulator. Emphasis is also placed on defining those software and hardware modules which have broad applicability across a wide range of reconfigurable domain. This program element focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration reconfigurable simulators. Project DC80 is focused on development of both the software and hardware interfaces and specifications required to completely determine a simulators. Work done on this program will have benefit across the Army and DoD by providing standards for interoperability and software reuse in this emerging A. Mission Description and Budget Item Justification. This program element (PE) provides for advanced development of an overarching architecture for and validation in the area of reconfigurable simulators and is correctly placed in Budget Activity 4.

DC80 Reconfigurable Simulator Advanced Development

work on any ground vehicle system, a battle command and control vehicle, a fire support vehicle for use by both the artillery and air defense, and a combat service support Projection Army. FY 95 efforts will include work on a reconfigurable generic rotary wing aircraft simulator, an armored vehicle simulator which will provide a basis for Laboratories. Program provides advanced development of modular software and hardware architectures for reconfigurable simulators. Development will provide a common framework for the development of a new generation of reconfigurable simulators that can be used to explore a wide variety of critical issues for the Force Project DC80 - Reconfigurable Simulators Advanced Development: Initiates advanced development of reconfigurable simulators for use in TRADOC Battle

FY 1994 Accomplishments: Unfunded in FY 1994

### FY 1995 Planned Program

- Develop overarching software architecture for reconfigurable simulators through complete domain analysis (5209)
  - Develop and demonstrate modular hardware architecture suitable for reconfiguration (2100)
- Define generic software modules necessary for defining the reconfigurable simulator in the context of its architecture (900)
  - SBIR/STTR (176).

FY 1996 Planned Program: Unfunded in FY 1996.

FY 1997 Planned Program: Unfunded in FY 1997.

477

Page 1 of 3 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUSTI	FICATION	ON SHE	ET (R-2	Exhibit			DATE Feb	February 1995	55
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060. Adv	PENUMBER AND TITLE 0603760A Distr Advanced Dev	ז זוזוב Distributive Interactive Simulations Development	e Interac ment	tive Sim	ulations -		
B. Program Change Summary										
Previous President's Budget Appropriated Value Admistments to Ammoniated Value		FY 1994	점_	EY 1995 11787 8385	FY 1996	FY 1997	<b>1</b> 0			
Current Budget Estimate Submission (BES)				8385						
C. Other Program Funding Summary									Ę	Ę
RDTE, A Budget Activity 5 PE 0604760A, Project DC81 Distributive	EY 1994 0	EY 1995 6412	EY 1996 0	FY 1997 0	FY 1998 0	EY 1999 0	EY 2000 0	EY 2001 0	Compl 0	Cost 12
Interactive Simulation RDTE, A Budget Activity 5 PE 0604715A Project DC91, Distributive Interactive Simulation	•	3445	6139	3745	11328	6992	17063	14053	Cont'd	Cont'd
D. <u>Schedule Profile:</u> The efforts funded in this project are non-system specific and represent continuing advanced development in the area of Reconfigurable Simulators; therefore, no milestones are provided	project are non-	system speci	ific and repr	esent contin	uing advanc	ed developn	cent in the a	rea of Reconf	igurable Sir	nulators;
	FY 1994		E	FY 1995		FY 1996	92	щ	FY 1997	
Request for Proposal release Contract Award	2	∢	- ~ ×	m	4 X	7	€ <b>4</b>	1 2	m	4
Software/Hardware Integration						×				
										<u> </u>
			Page 2 of 3 Pages	Pages				Exhibit R-2		



RDT&E PROGRAM ELEMENT/PROJECT	LEMENT/		COST BREAKDOWN (R-3)	EAKDO	WN (R-3			DATE F.	February 1995	266
BUDGET ACTIVITY 4 - Demonstration And Validation	alidation			PE NUMBER AND TITLE 0603760A Distr Advanced De	AND TITLE  A Distrik  A Deve	п.E istributive Inte Development	TITLE Distributive Interactive Simulations Development	mulations		PROJECT DC80
A. Project Cost Breakdown			7001 /25		300	200				
Software Development Modular Hardware Development			11 1334		\$209 2100	0661 Y	FY 1997			
Technical Data SBIR/STTR					906					
Total				~	8385					
B. Budget Acquisition History and Planning Information	nd Planning In	formation								
Performing Organizations Contractor or Contract										
	Award or Obligation	Performing Activity	Project	Total					7	F
	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	SI									
TBD Best value contract	Aug 95	7534	7534	0	0	7534	0	0	0	7534
lanager	ations									
Miscellaneous Various   SBIR/STTR	Various	67 <b>5</b> 176	675 176	0	0	675 176	0	0	0	675
Government Furnished Property: Not Applicable	: Not Applicab		) :			2				21
				Total						Į
				FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development				0	0	7534	0	0	0	7534
Subtotal Support and Management				0	0	851	0	0	0	851
Subtotal Test and Evaluation				0	0	0	0	0	0	0
l otal Project				0	0	8385	0	0	0	8385
			Page	Page 3 of 3 Pages		:		Exhibit R-3	en 	
				479						Item 57

RDT&E BUDGET ITEM JUS	N SHEE	TIFICATION SHEET (R-2 Exhibit)	ibit)	DATE February 1995	1995
BUDGET ACTIVITY 4 - DEMONSTRATION AND VALIDATION	0603766 Capabili (TIARA)	PE NUMBER AND TITLE 0603766A Tactical Capabilities (TENC) (TIARA)	E NUMBER AND TITLE  1603766A Tactical Exploitation of National  Capabilities (TENCAP) - Advanced Development  (TIARA)	ional velopment	PROJECT <b>D907</b>
		,			

Total Cost	34319 Continuing Continuing	cep battle ram. The Army near-real TUT), ation y the AC) into nmon ing MIES ence and in
Cost to Complete	Continuing	wrent and date of CAP) progress correct stated cal data for cal data for ferminal (Erminal Exploit is dictated b. S. and ETR. ddresses corems, includical Intelligues on effort at TENCAP a
FY 2001 Estimate	34319	bilities that bilities that exploit critical User TFAST), Tacting and protocol EPDS, MIES and Baseline as ENCAP system the Tact at (PE) focus the area of
FY 2000 Estimate	28377	ntingency fittional Capal theater capal rrocessors to lectronic Ta- t Terminal () e standards; apabilities () AP Common multiple TI- are providec gram Elemen alidation in
FY 1999 Estimate	28057	intents for or distance of Na and selected a prototype prent of the Extra Supportion of TENCAP cents. TENCAP cents
FY 1998 Estimate	23836	to a sample of the tactical commander's intelligence requirements for contingency force development and deep battle is are managed within the Army's Tactical Exploitation of National Capabilities (TENCAP) program. The savailable from existing and emerging National and selected theater capabilities that meet stated Army efficiencies, and develop concepts, techniques and prototype processors to exploit critical data for near-real est supports the advanced development/enhancement of the Electronic Tactical User Terminal (ETUT), ical High Mobility Terminal (THMT)), Forward Area Support Terminal (FAST), Tactical Exploitation stem (EPDS). The Army's emerging TES will incorporate the standards and protocols dictated by the TES brings all of the existing and emerging Army TENCAP capabilities (EPDS, MIES, and ETRAC) into ble to meet a wide range of contingency requirements. TENCAP common Baseline addresses common planned initiatives determined to have potential application to multiple TENCAP systems, including MIES naissance Program (DARP) (PE 0305154D). Specific details are provided in the Tactical Intelligence and folume II, and in the Army TENCAP Master Plan. This Program Element (PE) focuses on efforts matrate general military utility to include demonstration and validation in the area of TENCAP and is
FY 1967 Estimate	26913	der's intelligue Army's Ta and emergin concepts, to oncepts, to and (THMT) ''s emerging ting and ema of contingen of contingen wined to hav tP) (PE 030: my TENCAP utility to incl
FY 1996 Estimate	28369	cal comman ped within the om existing and develop the advance bility Termin. The Army I of the exis wide range wide range datives determ ogram (DAR d in the Arm ral military unitary
FY 1905 Estimate	14815	orts the tacti available fr eficiencies, s ext supports cal High Mo tem (EPDS) ES brings al le to meet a le to meet a olume II, an olume II, an
FY 1994 Actual	15080	ation: Supp development I capabilities is to correct d a. This projects the Taction ces the Taction mination Symmination Symmination Symmination Symmination program. T and scaleab and ongoing/p orne Recom
COST (in Thousands)	00907 Tactical Electronic Surveillance System - Adv Dev	A. Mission Description and Budget Ilem Justification: Supports the tactical commander's intelligence requirements for contingency force developments are managed within the Army's Tactical Exploitation of National Capabilities (TENCAP) program. The scope of the program is to leverage specific data and capabilities are managed within the Army's Tactical Exploitation of National Capabilities (TENCAP) program. The scope of the program is to leverage specific data and capabilities available from existing and emerging National and selected theater capabilities that meet stated Army tactical intelligence information and targeting needs to correct deficiencies, and develop concepts, techniques and prototype processors to exploit critical data for near-real time integration into the appropriate tactical echelon. This project supports the advanced development/enhancement of the Electronic Tactical User Terminal (ETUT), Mobile Integrated Tactical Terminal (MITT) (replaces the Tactical High Mobility Terminal (THMT)), Forward Area Support Terminal (FAST), Tactical Exploitation System (TES), and Electronic Processing and Dissemination System (EDS). The Army's emerging TES will incorporate the standards and protocools dictated by the Common Imagery Ground Surface System (CIGSS) program. TES brings all of the existing and emerging Army TENCAP common Baseline; downsized modular and scaleable to meet a wide range of contingency requirements. TENCAP common Baseline; downsized modular and scaleable to meet a wide range of contingency requirements. TENCAP systems, including MES and ETRAC that are funded under the Defense Airborne Recomanissance Program (DARP) (PE 0305134D). Specific details are provided in the Tactical Intelligence and Related Activities (TIARA) Congressional Justification Book, Volume II, and in the Army TENCAP Master Plan. This Program Element (PE) focuses on efforts correctly placed in Budget Activity 4.

## FY 1994 Accomplishments:

- Continued to pursue technology for the refinement of the TENCAP Common Baseline for fully exploiting National capabilities to meet emerging worldwide contingency scenarios. (6996)
  - Initiated advanced development of five additional MITTs to replace existing THIMTs. (2600)
- Continued advanced development to retrofit ETUT with enhanced MITT hardware and software. (1800)
- Continued support to TENCAP program management and administrative activities (e.g. FFRDC (Aerospace), Army Research Laboratory (ARL) support, U.S. Army Space Program Office (ASPO) support and Contractor System Engineering and Technr logy Assistance (SETA) support. (3673)

Page 1 of 8 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION	IFICATION SHEET (R-2 Exhibit)	re February 1995	1995
	PE NUMBER AND TII LE		PROJECT
4 - DEMONSTRATION AND VALIDATION	0603766A Tactical Exploitation of National	nal	D907
	Capabilities (TENCAP) - Advanced Development	opment	
	(TIARA)	•	

# FY 1995 Planned Program:

- Continue to pursue technology for the refinement of the TENCAP Common Baseline for fully exploiting National capabilities to meet the changing threat environment (SUCCESS) radios and support to the Joint Collection Management Tool (JCMT), the follow-on to the Army's Collection Management Support Tools to include Demand Assign Multiple Access (DAMA) Appliqué into Common Baseline Synthesized UHF Computer Controlled Sub-System (CMST). (9284)
- Initiate study for concept design of the TES. (1230)
- Continue artvanced development efforts to retrofit ETUTs with enhanced MITT hardware and software. (400)
- Continue support to TENCAP program management with administrative activities (e.g. FFRDC (Aerospace)), ARL support, ASPO support and Contractor SETA support. (3605)
- Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (296)

# FY 1996 Planned Program:

- Continue to pursue technology and refine techniques for fully exploiting National capabilities which are common to all TENCAP systems to meet emerging worldwide contingency scenarios such as upgrades to Communication System Processor (CSP) to incorporate Tactical Packet Network (TPN) and Defense Security Network (DSNET) connectivity, DAMA Appliqué to SUCCESS Radio, and continue support to JCMT. (9478)
  - Initiate design concept and prototype development of Tactical Exploitation Systems (TES) with state-of-the-art hardware and software. (10236)
    - Complete advanced development of ETUT. (400)
- Continue support to TENCAP program management with administrative activities (e.g., FFRDC (Aerospace), ARL support, ASPO support, Contractor SETA support and TEC. (Part of this effort was funded under PE 0603730A in FY 95). (5275)
  - Continue support to efforts being developed under PE 0305154D (DARP) Project P531 (e.g., FFRDC (Aerospace), ASPO, SETA, and TEC. (2980)

## FY 1997 Planned Program:

- Continue to pursue technology and refine techniques for fully exploiting National capabilities common to all TENCAP systems to meet emerging worldwide contingency scenarios. (6550)
- initiate advanced development efforts for ground processing technologies for new National sensors capabilities that will be incorporated into TES. (10899)
- Continue support to TENCAP program management with administrative activities (e.g., FFRDC (Aerospace), ARL support, ASPO support, Contractor SETA support and TEC. (6070)
  - Continue support to efforts being developed under PE 0305154D Project P531 (e.g., FFRDC (Aerospace), ASPO, Contractor SETA, and TEC.) (3394)

Page 2 of 8 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFI	CATION	SHEET (F	<b>IFICATION SHEET (R-2 Exhibit)</b>	(	DATE February 1995	1995
BUDGET ACTIVITY 4 - DEMONSTRATION AND VALIDATION		PENUMBER AND TITLE 0603766A Tact Capabilities (TE (TIARA)	Tactical Exp s (TENCAP)	PENUMBER AND TITLE 0603766A Tactical Exploitation of National Capabilities (TENCAP) - Advanced Development (TIARA)	itional svelopment	PROJECT D907
B. Program Change Summary						
Previous President's Budget Appropriated Value Adjustments to Appropriated Value (SBIR/STTR Decrement) Current Budget Submit/President's Budget	EY 1994 15295 15295 -226 15069	EY 1995 15008 14815 0 14815	EY 1996 22000 0 0 28369	FY 1997 12756 0 0 26913		
Change Summary Explanation:						

the development of TES which was initiated in FY 95. Therefore, the increases to this PE/PROJ in FY 96 and FY 97 is the result of consolidating Proj D560 (which prior PE 0604766A/PROJECT D909 IN FY 96 AND BEYOND. These PEs/Projects were consolidated because in FY 95 all funds directly related to the development of IES, expenses, TEC, FFRDC, Contractor SETA, and certain studies) remain in this PE and are still required. In addition to the DARO support cost, Project D560 also funded 0603766A/PROJECT D907 IN FY 96 AND BEYOND. AS A PART OF THIS SAME ACTION PE 0604740A/PROJECT D662 WAS CONSOLIDATED WITH Finding: IN FY 96, THE ARMY CONSOLIDATED THE REMAINING PES SUPPORTING THE ARMY TACTICAL EXPLOITATION OF NATIONAL ISIPS, and ETRAC programs were moved to OSD PE 0305154D, DARP. Even though the funds have been moved to the Defense Airborne Reconnaissance Office (DARO), the Department of the Army continues to support these development efforts on their behalf. Funding to support these DARO efforts (ASPO salaries and CAPABILITIES (TENCAP) PROGRAM. ALL EFFORTS FUNDED UNDER PE 0603730A/PROJECT D560 WERE CONSOLIDATED WITH PE to FY 96 funded the TES development effort and support to Army TENCAP systems developed under DARO) with this project.

Schedule: None

Technical: None

Page 3 of 8 Pages

Exhibit R-2

2

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTI	TEM JUSTI	FICATION	FICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibit			DATE Feb	February 1995	95
BUDGET ACTIVITY 4 - DEMONSTRATION AND VALIDATION	ATION		Cap (TIA	PE NUMBER AND TITLE 0603766A Tact Capabilities (TE (TIARA)	TLE actical E (TENCAI	PENUMBER AND TITLE 0603766A Tactical Exploitation of National Capabilities (TENCAP) - Advanced Develop (TIARA)	on of Nat			PROJECT D907
C. Other Program Funding Summary	FV 1994	FV 1995	5 5 86	FV 1997	FV 1008	FV 1000	7000	FV 2001	To	Total
RDTE, A Budget Activity 4 PE 0603730A Project D560 Tact Surv Sys - Adv Dev	15140	11717	0	0	0	0	0	0		<u> </u>
RDTE, A Budget Activity 5 PE 0604740A Project D662 Tact Surv Sys - Eng Dev	37534	2093	0	0	0	0	0	0		
PE 0604766A Project D909 TENCAP - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28333	Cont	Cont
RD 12, D Blaget Activity / PE 0305154D Project P531 DARP	0	40017	33833	37216	12390	6328	6328	6328	Cont	Cont
Other Procurement Army, OPA-2 BZ 7315 TENCAP BA 0329 DARP	7729 1927	4636	4617	1807	1784 0	1853 0	4971 0	14916 0	Cont N/A	Cont N/A
Procurement, Defense Wide PE 0305154D Project P531		0	88700	123400	77900	69100	71400	73300	Cont	Cont
D. <u>Schedule Profile</u>	FY 1994		Ē	FY 1995		FY 1996	9		FY 1997	
	1 2 3	4	1 2	m	4	7	3 4	-	2 3	4
Complete Field Testing of MITT 2-6 Complete Adv Dev ETUT Retrofit	×				×					
Initiate Dev of Additional 5 MITTs		×								
			Page 4 of 8 Pages	Pages				Exhibit R-2		
			193							Item 58

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R.	2 Exhib	3		<u> </u>	DATE F.	- Pbrua	February 1995	
BUDGET ACTIVITY 4 - DEMONSTRATION AND VALIDATION	PENUMBER AND TITLE  0603766A Tactical Exploitation of National Capabilities (TENCAP) - Advanced Development (TIARA)	Tactical Exploitation of National (TENCAP) - Advanced Develop	Exploi	tation o dvance	f Natio	onal	ent		
FY 1994	FY 1993			FY 1996			FY 1997	160	
1 2 3 4	1 2 3	4	7	m	4	-	7	æ	4
Initiate Analysis/Design Concept for TES	×								
Test Prototype HOATR	×								
Initiate Prototype Development for TES			×						· · ·
Complete Adv Dev of DAMA Appliqué to all TENCAP Common Baseline SUCCESS Radios					×				
Complete Adv Dev of 5 Additional MITTS		×							
Pa	Page 5 of 8 Pages					Exhibit R-2	2-2		
	484							1	Item 58



چ

RDT&E PROGRAM ELEMENT/PROJECT CO	PROJECT COST BREAKDOWN (R-3)	DATE February 1995
BUDGET ACTIVITY 4 - DEMONSTRATION AND VALIDATION	PE NUMBER AND TITLE  0603766A Tactical Exploitation of National	PROJECT DOO?
	Capabilities (TENCAP) - Advanced Development	
	(TIARA)	•

# A. Project Cost Breakdown

	FY 1994	FY 1995	FY 1996	FY 1997	
System Development:					
MITT	2600	0	0	0	
ETUT	1800	004	400	0	
Common Baseline (*1-*2)	9669	9284	9478	6550	
TES	0	1230	10236	10899	
Subtotal System Development	11396	10914	20114	17449	
Program Management					
ASPO In-House (*4)	1122	1109	2441	2479	
FFRDC (*2)	1081	953	75	95	
System Engineering (Contractor) (*2)	870	1339	4514	5840	
System Engineering (Government) (*2)	009	200	1225	1050	
Subtotal Program Manageme 1t (*3)	3673	3901	8255	9464	
Total (*2)	15069	14815	28369	26913	

<sup>(\*1)</sup> TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAl systems (including MIES and ETRAC that are funded under the DARP (PE 0305154D). (\*2) In FY 96 and beyond, efforts previously funded under 0603730A. D560 are consolidated into this project.

Exhibit R-3

<sup>(\*3)</sup> Approximately 40% of program management cost in FY 96 and FY 97 support efforts being developed under PE 0305154D.P531.

<sup>(\*4)</sup> The ASPO In-House support in this project also supports efforts being developed under PE 0604766A. D909.

RDT	RDT&E PROGRAM ELEMENT/P	RAM ELE	MENT/PR	OJECT	COST B	REAKDO	ROJECT COST BREAKDOWN (R-3)		DATE	February 1995	965
BUDGET ACTIVITY 4 - DEMONSTRATION AND VALIDATION	LATION AND	VALIDAT	NOI		PE NUMBER AND 0603766A Capabilitie (TIARA)	PE NUMBER AND TITLE 0603766A Tactic Capabilities (TEN	FENUMBER AND TITLE 0603766A Tactical Exploitation of National Capabilities (TENCAP) - Advanced Development (TIARA)	tation of N	lational		PROJECT D907
B. Budget Acquisition History and Planning Information Performing Organizations	on History and	Plannine Info	rmation								
Contractor or Government Performing	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Product Development Organizations	st Organization	<b>3</b>									<del></del>
ARL (MITT) Classified (ETUT) Classified (Cmn	MIPR MIPR MIPR	2094 1094 N/A	<b>4 4 4</b> 2 2 2 2	<b>4 4 4</b> 2 2 2 2	<b>4 4 4</b> 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2000 1800 75%	0 400 9284	0 400 9478	0 0 6550	Cont	Cont
TBD (TES)	MIPR	TBD	N/A	N/A	0	0	1230	10236	10899	Cont	Cont
Support and Management Organizations	rement Organiza	ations									
USASPO SSD/FDEA	In-House	N/A	N/A	N/A	N/A	1122	1109	2441	2479	Cont	Cont
(FFRDC)	MIPR	1Q EA FY	N/A	N/A	N/A	1081	953	75	95	Cont	Cont
Govt)	MIPR	1Q EA FY	N/A	N/A	Y/X	0	0	1025	1050	Cont	Cont
Cont) ARI (Svs Eng	MIPR	1Q EA FY	N/A	N/A	N/A	870	1339	4514	5840	Cont	Cont
Govt) MIPR 1Q E. Test and Evaluation Organizations: None	MIPR Organizations:	IQ EA FY None	N/A	N/A	N/A	009	200	200	0	Cont	Cont
Government Furnished Property: None	hed Property: 1	None									

Item 58

Exhibit R-3

Page 7 of 8 Pages 486 UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	EAKDO	WN (R-3		DATE F6	February 1995	95
BUDGET ACTIVITY 4 - DEMONSTRATION AND VALIDATION	PE NUMBER AND TITLE 0603766A Tact	AND TITLE	DE NUMBER AND TITLE GEOSTEGA TACTICAL EXPLOITATION OF NATIONAL	ation of N			PROJECT D907
	Capabill (TIARA)	ities (TEN	Capabilities (TENCAP) - Advanced Development (TIARA)	ivanced D	evelopm	ent	
	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	Y Y Z	11396 3673	10914 3901	20114 8255	17449 9464	Cont	Cont
Subtotal Government Furnished Property Program Total	Y Y X X	0 15069	0 14815	0 28369	26913	Cont	Cont
						<u>•</u>	
n y	r uke o oj o r ukes				EXIIIDIL N-3	2	

RDT&E BUDGET ITEM JUST	EM JUS		HS NOI	IFICATION SHEET (R-2 Exhibit)	-2 Exhib	it)		DATE Fel	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI	PE NUMBER AND TITLE 0603774A Night Vision Systems Advanced Dev	ntle <b>light Visi</b>	on Syste	ms Adva	inced De		PROJECT D131
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
D131 Night Vision Systems Advanced Development	1001	2 <b>6</b> 76	2860	2919	3247	3215	3682	3678	3676 Continuing Continuing	Continuing

devices/systems for acquisition and engagement of enemy targets at maximum weapon system ranges under degraded battlefield weather conditions and in countermeasure A. Mission Description and Budget Item Justification. This program element encompasses the advanced development phase of the Army Acquisition cycle for Night environments. The efforts are centered around development of countermeasure and electro-optic sensors for the individual soldiers and combat vehicles to meet stated (EMD) phase of the acquisition cycle. This project provides the funding necessary to institute advances for product improvement or horizontal integration to upgrade Army deficiencies. This project provides the mechanism to transition tech base programs for electro-optical sensors to the engineering manufacturing development Vision and Electro-Optic (NVEO) devices/systems and prepares them for engineering development. The key objective of this program is to provide NVEO current capabilities. The focus is on efforts associated with advanced technology development and is properly placed in this budget activity.

# FY 1994 Accomplishments:

- Continuation of the Standardized Advanced Detector Dewar Assembly (SADA) program. This program developed the Tri-Service Standard High/Mid to High Dewar Assembly for Second Generation Infrared sensors to meet future weapon systems requirements (such as Horizontal Technology Integration). (3195)
  - Implemented development of an integrated helmet mounted display program (Mounted Warrior) for the combat vehicle crewman to permit viewing of the vehicle's tactical displays while operating in an "open hatch" mode (1499)

# FY 1995 Planned Program:

- Complete the SADA program. Twenty five (25) units will be delivered and integrated into on-going development of Second Generation Infrared (IR) systems such as Improved TOW Acquisition System (ITAS). (1395)
- Implement miniaturization of electronic components and optimal optical design for mounted warrior helmet mounted display (726)
- Begin development of Advanced Second Generation FLIR (SGF) B kit features such as aviation application, digital imagery interface card and improved optical (OI) features. (500)
  - Small Business Innovative Research (SBIR)/ Small Business Technology Transfer Program (STTR) (57)

# FY 1996 Planned Program:

- Prepare documentation for integration and transition of the helmet mounted display to Program Executive Office, Armored Systems Modernization (PEO ASM) (175)
  - Continue Advanced Second Generation FLIR improvement for HTI B kit. Demonstrate through modeling, B kit applications to aviation (Apache) and Long Range Advanced Scout Surveillance System (LRAS3). (2585)
- Prepare acquisition documentation and implement developmental contract for LRAS3 start (200)

Page I of 4 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATI(	NS SE	ET (R-2	Exhibit			DATE	February 1995	A S
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060	PE NUMBER AND TITLE 0603774A Nigh	ITLE light Visi	PENUMBER AND TITLE  0603774A Night Vision Systems Advanced Dev	ms Adva	nced De		PROJECT D131
<ul> <li>FY 1997 Planned Program:</li> <li>Implement digital imagery interface card into HTI SGF B kit (292)</li> <li>Implement in-house prototype of aviation SGF B kit (Apache) ( 2043)</li> <li>Implement Advanced SGF B kit features into M2A3, BFVS and M8 (584)</li> </ul>	HTI SGF B k B kit (Apach A2A3, BFVS	it (292) e) ( 2043) and M8 (58								
B. Program Change Summary										
Previous President's Budget Appropriated Value Adjustments to Appropriated Value		FY 1994 4768 4768 -74	덦	<u>FY 1995</u> 2695 2678	FY 1996 2975	FY 1997 2933	7 <u>7</u> 83			
Current Budget Submit/President's Budget		4694		2678	2960	2919	61			
C. Other Program Funding Summary									ĺ	
PE 0602709A/Night Vision and Electro-Optical	FY 1994 18852	FY 1995 19326	FY 1996 17086	FY 1997 17175	FY 1998 18071	FY 1999 19457	FY 2000 19552	FY 2001 20057	To Compl Continue	Total Cost Continue
PE 0603710A/Night Vision Advanced	33324	33177	37969	37193	31544	41962	43915	42401	Continue	Continue
Development No. 1 E. A. Duaget Activity 4 PE 0604710A Night Vision Devices Engineering Development, Budget Activity 5	41328	42803	39697	39295	22952	21487	18746	30364	Continue	Continue
D. Schedule Profile	FY 1994	. •	£ ,	FY 1995	•	FY 1996	ب مو	•	FY 1997	,
Implement development of integrated helmet mounted display program Battle Lab Simulation Complete study of display application for aviation		* **	1	n	<del>-</del>	7	J	-	۳ ۲	4
			Page 2 of 4 Pages	Pages				Exhibit R-2	2	
			489							Item 59

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-	2 Exhib	£		DATE	February 1995	26
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603774A Night Vision Systems Advanced Dev	Night Vis	sion Systen	ns Adva	anced D	)ev	
FY 1994	FY 1995		FY 1996	9,	-	FY 1997	T ,
	· ×	•		•	-	5	•
Coordinate Warfighting experiment		×					
planning with mounted battlelab  Advanced B kit features		×					
Transition to HTI B kit Implementation system integration				×			×
program						>	
repare acquisition documentation and implement development contract Implement in-House prototype						× ×	
•Complete							
							-
Pare	Page 3 of 4 Pages				Exhibit R-2	R-2	
							1

RDT&E PROGRAM ELEMENT/P	T/PROJECT COST BREAKDOWN (R-3)	ST BREAK	<b>JOWN (R-3)</b>		DATE Februa	February 1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE 1	PE NUMBER AND TITLE O603774A Nigh	TITLE Night Vision Systems Advanced Dev	tems Adva	nced Dev	PROJECT <b>D131</b>
A. Project Cost Breakdown						
Primary Hardware Development	FY 1994 500	FY 1995 700	FY 1996 1800	FY 1997 1800		
Ancillary Hardware Development	1400	1063	0	0		
Contractor Engineering Support	006	300	260	260		
Government Engineering Support	1400	350	904	904		
I rave   Miscellanenis	20	45 5.5	S &	45		
Development Test & Evaluation	0	90	300	300		
SBIR/STTR	0	57	0	0		
Total	4694	2678	2960	2919		
	Page 4 of 4 Pages	4 Pages			Exhibit R-3	

	RDT&E BUDGET ITEM JUST	SOF WE	TIFICAT	HS NOI.	EET (R	IFICATION SHEET (R-2 Exhibit)	it)		DATE <b>Fet</b>	February 1995	96
BUDG!	BUDGET ACTIVITY 4 - Demonstration And Validation			PE NL	PE NUMBER AND TITLE 0603801A AVIA	PENUMBER AND TITLE OG03801A Aviation Advanced Development	dvanced	Develor	ment		
	COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1986 Estimate	FY 1907 Estimate	FY 1988 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	15480	16647	6430	9998	7896	8324	1999	9699	Continuing	Continuing
D832	DB32 Advanced Maintenance Concepts and Equipment	3572	4440	1782	2303	2844	2806	3409	3487	Continuing	Continuing
0833	DB33 Cargo Handling Equipment	2144	2210	2152	2125	14 2	2676	3142	3211	Continuing	Continuing
0846	DB45 Aviation Life Support Equipment (ALSE) - Advanced Development	7976	<b>1986</b>	3907	4236	2813	2740	0	0	0	33450
			-					<b>]</b>			

A. Mission Description and Budzet Item Justification: This PE provides advanced development aviation support of tactical programs associated with air mobility, advanced maintenance concepts and equipments, and Aviation Life Support Equipment (ALSE). The projects in this Program Element support research efforts in advanced development phase of the acquisition strategy and are correctly placed in Budget Activity 4.

standardized multi-output equipment compatible with all Army aircraft models; developing rapid battle repair procedures and tools to speed the return of aircraft to combat maintenance (primarily in the area of diagnostics/prognostics) and servicing operations by: replacing obsolete, insupportable ground support equipment with new and Project DB32 - Advanced Maintenance Concepts and Equipment: This project enhances utilization of current and future aircraft by improving the efficiency of ready status; and developing new equipment for aerial recovery of damaged aircraft. Included in the project is the Intelligent Fault Locator (IFL), a program to test artificial intelligence-based troubleshooting software on an AH-64 Apache aircraft.

# FY 1994 Accomplishments:

- Demonstrated Non-Destructive Inspection/Non-Destructive Test (NDI/NDT) prototype hardware and initiate final design effort (286)
- Completed development, testing and demonstration of Combat Maintenance/Battle Damage Repair (CM/BDR) kit for fiber optic systems (261)
  - Completed detailed design, fabricated hardware, and conducted static lift tests of Unit Maintenance Aerial Recovery Kit (UMARK) (200)
    - Initiated design, fabrication, and integration of Advanced Boresight Equipment (ABE) pre-production units (2405)
      - Complete evaluation and finalized design of the Shop Equipment Contact Maintenance (SECM) (20)
- interface electronic Apache TM repair procedures with IFL and investigate active bus interface diagnostic methods (400)

# FY 1995 Planned Program:

- Conduct development and operational test of the UMARK (230)
- Continue fabrication and integration of ABE pre-production units; and initiate an ILS program in preparation for a milestone III IPR. (3502)
- Automate the NDI/NDT inspection methods and repair procedures through application knowledge based software (617)

Page I of II Pages

chibit R-2

item 60



### February 1995 0603801A Aviation Advanced Development DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 4 - Demonstration And Validation BUDGET ACTIVITY

#### SBIR/STTR (91)

# FY 1996 Planned Program:

- Demonstrate knowledge base automated NDI/NDT inspection and repair procedures for composite components (114)
- Initiate a Dem/Val program for a comprehensive on-board diagnostic system interfaced with an automated maintenance and logistics system (1490)
  - Complete the Dem/Val phase of the ABE Program (342)
- Initiate a program to explore high reliability, low maintenance alternatives to nickel cadmium batteries (162)
- Initiate development of an Advanced Portable Maintenance Aid for hand free interface with maintenance procedures and instructions (153)
- Develop/demonstrate environmentally sensitive options for aircraft maintenance (110)

# FY 1997 Planned Program:

- Initiate development of a field repair capability for low observable components (200)
- Complete detailed design of the on-board diagnostics system and define the interface with the automated maintenance and logistics system (1317)
  - Assemble the advanced Portable Maintenance Aid and initiate a field demonstration (290)
- Conduct field evaluations of nickel cadmium battery alternatives (198)
- Demonstrate environmentally friendly alternatives for aircraft maintenance problems (298)

Project DB33 - Cargo Handling Equipment: This project develops equipment and operational improvements for loading and off-loading helicopter cargo in all-weather, around the clock combat scenarios

# FY 1994 Accomplishments:

- Conducted functional test and completed documentation for improved 30mm Ammo Loader and demonstrate a rapid (15 minutes) turnaround FARP (561)
- Contract award, initiated design of Advanced Aerial Cargo Handling System to enhance cargo helicopter productivity (1533)
- Complete design, fabrication and support testing of Advanced Material External Cargo Sling leg (50)

# FY 1995 Planned Program:

- Complete design, fabrication and bench test of a pre-production prototype of the 30mm Ammo Loader compatible with weight goals for both the AH-64A and C/D aircraft (300)
- Complete the detailed design and initiate fabrication of advanced internal and external cargo handling systems (1864)
  - SBIR/STTR (46)

# FY 1996 Planned Program:

Initiate definition of a high-mobility transport system for aircraft maintenance units (433)

Exhibit R-2

Page 2 of 11 Pages

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

**BUDGET ACTIVITY** 

4 - Demonstration And Validation

PE NUMBER AND TITLE
0603801A Aviation Advanced Development

February 1995

DATE

Complete fabrication and installation of advanced internal and external cargo handling systems and demonstrate their impact on cargo aircraft productivity. (1719)

# FY 1997 Flanned Program:

- Complete the dem. 1stration of advanced internal and external cargo handling systems (1171)
- Initiate the demonstration of a cargo movement system for heavy (95th percentile) loads (415)
- Continue the aircraft maintenance unit mobility system definition (538)

environmental protection, ballistic protection, night vision capability, heads-up displays, nuclear flash protection, directed energy eye protection, and flame/heat protection. Project DB45 - Aviation Life Support Equipment (ALSE)/Advanced Development: This project provides advanced development for those systems and items of equipment The AW design will improve overall aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety, and survivability. Both joint and service approaches to improve crew and passenger crash survivability and thereby reduce potential injuries/casualties. The Air Warrior program will provide the aircrew with a which are unique and necessary for the sustainment and enhanced survivability of Army aircrews and passengers on the future integrated battlefield and during related training activities. Advanced development programs will focus on the development and evaluation of emerging technologies and the adaptation of commercial and nondevelopmental items (NDI) to military requirements. The Joint Cockpit Airbag System (JCABS) effort will evaluate a variety of supplemental restraint system systems approach to chemical and biological (CB) protection, noise protection, microclimatic conditioning, crash and post-crash survivability, concealment and independent efforts will be pursued under the scope of this project.

# FY 1994 Accomplishments:

- Continued fabrication and evaluation of Advanced Laser Eye Protection (LEP) (Jaint Service) (947)
- Complete evaluation and testing of Inflatable Body and Head Restraint System (IBAHRS) (Joint Service) (699)
- Initiate development of Air Warrior Program definition and concept planning documents (potential joint program) (1858)
  - Initiate development of Joint Cockpit Air Bag System (JCABS) (Joint Service) (2246)
- Continue Advance Development of the Agile Laser Eye Protection (LEP) Program (Joint Service) (1414)
  - Initiate Aircrew Integrated Common Helmet (AICH) Advanced Development (2600)

# FY 1995 Planned Program:

- Continue fabrication and evaluation of the Agile LEP Program (Joint Service) (975)
  - Complete Milestone III IPR for IBAHRS (Joint Service) (172)
- Conduct Air Warrior Advanced Development and technology trade-off (5869)
- Continue Advanced Development of the JCABS Program (Joint Service) (1381)
  - Continue AICH Advanced Development (1399)
- SBIR/STTR (20)

Page 3 of 11 Pages

Exhibit R-2

Item 60



RDT&E BUDGET ITEM JUSTIFIC	ATION S	FICATION SHEET (R-2 Exhibit)	2 Exhibit)		DATE February 1995	
BUDGET ACTIVITY 4 - Demonstration And Validation		PE NUMBER AND TITLE 0603801A AVIA	TITLE Aviation Ad	DE03801A Aviation Advanced Development	opment	1
<ul> <li>FY 1996 Planned Program:</li> <li>Prepare for JCABS Milestone II (Joint Service) (857)</li> <li>Continue fabrication and evaluation of the Agile LEP (Joint Service) (550)</li> <li>Initiate Air Warrior Advanced Development and evaluate prototype design alternatives (1900)</li> <li>Initiate NBC Advanced Initiatives Advanced Development for air vehicle and aircrew (600)</li> </ul>	ماند) (550) Pre design altu ir vehicle and	ernatives (1900) aircrew (600)				Τ
<ul> <li>FY 1997 Planned Program:</li> <li>Complete Air Warrior Advanced Development and evaluate prototype design alternatives(2232)</li> <li>Conduct Air Warrior early user demonstration/test (506)</li> <li>Continue fabrication and evaluation of the Agile LEP (Joint Service) (550)</li> <li>Continue NBC Advanced Initiatives Demonstration/Validation (950)</li> </ul>	prototype design 8 Service) (550) ion (950)	ulternatives(2232				
B. Pregram Change Summary:  Previous President's Budget  Appropriated Value  Adjustments to Appropriated Value  a. SBIR/STTR (-236)	FY 1994 15716 15716 236	<u>FY 1995</u> 9367 16647	FY 1996 8459	<u>FY 1997</u> 8693		
Current Budget Submit/President's Budget	15480	16647	8430	9998		
	Page 4	Page 4 of 11 Pages			Exhibit R-2	

RDT&E BUDGET ITEM JUSTII	M JUST	<b>IFICATION</b>	ON SHE	SHEET (R-2 Exhibit)	Exhibit	<b>a</b>		DATE Fe	February 1995	96
BUDGET ACTIVITY 4 - Demonstration And Validation			PE N(	PE NUMBER AND TITLE 0603801A AVIA	IITLE Viation A	TITLE Aviation Advanced Development	1 Develor	oment	۵	PROJECT DB32
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB32 Advanced Maintenance Concepts and Equipment	3572	4	1782	2303	7762	2808	3409	3487	Continuing	Continuing
C. Other Program Funding Summary RDTE, A Budget Activity 2 PE 0602211 Project A47A Acronautical and Aircraft Weapons Tech	EY 1994 23004	FY 1995 16672	EY 1996 17732	EV 1997 23294	EY 1998 25212	EY 1999 27636	EY 2000 27037	EY 2001 29685	To Compl Cont'g	Total Cost Cont'g
D. Schedule Profile	FY 1994 2 3	₩	- E 4	FY 1995 2 3	4	FY 1996 2 3	% m		FY 1997	4
Completed development, testing and demonstration of (CM/BDR) Kit Completed detailed design, fabricated hartware, and conducted static lift tests of (UMARK) Complete evaluation and finalize design of the (SECM) Conduct development and operational test of the UMARK Complete the Dem/val Phase of the ABE program Complete detailed design of the on-board diagnost as system and define the interfact with the automated maintenance and logistics system	* *	*		×		·	×			×
			Page 5 of 11 Pages	Pages				Exhibit R-2	2	
										;



RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	OWN (R-3)	DATE Feb	February 1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603801A AVIA	E ation Advanc	PENUMBER AND TITLE 0603801A Aviation Advanced Development	PROJECT DB32
A. Project Cost Breakdown				
FY 1994	FY 1995	FY 1996	FY 1997	
Primary Hardware Development 63		700	400	
Software Development 370		223	009	
Systems Engineering 145		30	425	
Integrated Logistics Support	2100	126		
DT/OT 50		398		
Management	5 170	150	167	
Research Personnel 774		594	596	
Miscellaneous		150	115	
Total: 3572		2371	2303	

B. Budget Acquisition History and Planning Information: Not required

Page 6 of 11 Pages

Exhibit R-3

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	96
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU	PE NUMBER AND TITLE 0603801A AVIA	Aviation Advanced Development	dvanced	i Develor	sment		PROJECT DB33
COST (in Thousands)	FY 1994 Actual	FY 1986 Estimate	FY 1996 Eeffmate	FY 1997 Estimate	FY 1996 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
D833 Cargo Handling Equipment	2144	2210	2152	2125	2141	2678	3142	3211	Continuing	Continuing
C. Other Program Funding Summary RDTE, A Budget Activity 2 PE 0602211 Project A47A Aeronautical and Aircraft Weapons Technology	EY 1994 23004	EY 1995 16672	EY 1996 17732	EY 1997 23294	EY 1998 25212	EY 1999 27636	EY 2000 27037	EY 2001 29685	To Compl Cont'g	Total Cost Cont'g
D. Schedule Profile	FY 1994	-	<u>.</u> -	FY 1995	-	FY 19%	% "	-	FY 1997	
Contract award, initiated design of Advanced Aerial Cargo Handling System Complete design, fabrication and support testing of the Advanced Material External Cargo Sling Leg Complete design, fabrication and bench test of a pre-production prototype of the 30mm Ammo Loader compatible with weight goals for both the AH-64A and C/D aircraft Complete the demonstration of advanced internal and external cargo handling systems		· *	•	,	· ×	•		· ×	4	•
			rage / Of 11 Fages	rages				באוווטון ה-2		Item 60

498

RDT&E PROGRAM ELEMENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	<b>JOWN (R-3)</b>	DATE	February 1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603801A Avia	E ation Advanc	re NUMBER AND TITLE 0603801A Aviation Advanced Development	PROJECT DB33
A. Project Cost Breakdown				
		FY 1996	FY 1997	
Primary Hardware Development		1000	770	
Systems Engineering 500	316	377	230	
DT	62		347	
Program Management		149	164	
Research Personnel	05 697	545	533	
llaneous		<b>8</b>	18	
Total 21		2152	2125	

B. Budget Acquisition History and Planning Information: Not required

Page 8 of 11 Pages

Item 60

Exhibit R-3

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE FA	February 1006	y o
BUDGET ACTIVITY			PE N	PE NUMBER AND TITLE	TTLE				4	PROJECT
4 - Demonstration And Validation			090	0603801A A	viation A	<b>Aviation Advanced Development</b>	Develor	oment		DB45
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DB45 Aviation Life Support Equipment (ALSE) - Advanced Development	<b>1978</b>	7968	3807	96234	2813	2740	0	O	0	33459
C. Other Program Funding Summary									٤	100
RDTE, A Budget Activity 5 PE 0604801A Project DC45 Aviation 1 ife current eminment (AT SE)	FY 1994 8221	FY 1995 4650	FY 1996 5142	FY 1997 6899	FY 1998 7835	FY 1999 7153	FY 2000 2498	<u>FY 2001</u> 2494	Cont	SS
Engineering Development Aircraft Procurement, Array (APA) SSN AZ3110 ALSE	7192	8809	9732	9577	10281	10958	9954	9953	Cont	Cont
D. Schedule Profile	FY 1994	•	- F (	FY 1995	-	FY 1996	% ~ •	-	FY 1997	*
,			· •	,	•	1				
Material Need Statement (MINS) Approval Milestone 0 Demonstration/Validation Phase			× ×				×			
Joint Cockpit Air bags system (JCABS)  Demonstration/Validation contract award  Complete Trade Studies	*	•.	* *							
Component design verification test Engineering Manufacturing Development				×				×		
			Page 9 of 11 Pages	l Pages				Exhibit R-2	5	
										Irem 60

200



RDT&E PROGRAM ELEMENT/P	RAM EL	EMENT/PR	ROJECT	COSTB	REAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	968
BUDGET ACTIVITY 4 - Demonstration And Validation	lidation			P & NUMBER ANI 0603801A		on Advan	Aviation Advanced Development	opment		PROJECT DB45
A. Project Cost Breakdown			, i							
Contract Engineering Support Program Management Support Total			FY 1994 8797 967 9764	•	6990 3007 9997	FY 1996 174 3733 3907	FY 1997 670 3588 4238	~~ ~ ~		
B. Budget Acquisition History and Planning Information	d Planning L	aformation								
Performing Organizations										
	ward or	Performing	Project	Total						
Performing or Funding Activity Vehicle	Obligation Date	Activity EAC	Office EAC	Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to	Total
Developme Simula	ns a									T CKI and
Phoenix, AZ (ICABS) Simula				5712	1000	0	0	0	0	6712
SS-CPFF	May 1994			0	1430	750	174	0	0	2354
Agile Laser NAWC SS-CPFF NBC TBD C-CPFF	Feb 95 Jan 97	6417	6620	4648 0	700	740	0 680	0 009	3920	6088
Support and Management Organizations Various MIPR Variou Organization	zations Various	N/A	N/A	8777	6634	8507	2783	3638	1636	31975
Total Performing Organization				19137	9764	7666	3907	4238	5556	52599
Government Furnished Property -Not applicable	Not applicabl	<u>v</u>								
			Page	Page 10 of 11 Pages	Zes			Exhibit R-3	<u>۲-</u> 3	
				501						Item 60

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BF	REAKDO	WN (R-3		DATE	February 1995	29.5
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603801A Avia	PE NUMBER AND TITLE  0603801A Aviation Advanced Development	on Advance	ed Devel	opment		
	Total						
	Prior to	1007	1006	2		Budget to	Total
Subtotal Product Development	10360	3130	1490	1124	600 600	Complete 1920	Program 20624
Subtotal Support and Management	8777	6634	8507	2783	3638	1636	31975
Total Project	19137	9764	1666	3907	4238	5556	\$2599
$P_{\mathbf{q}}$	Page 11 of 11 Pages	es			Exhibit R-3	-3	

Item 60

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAI	TION SH	IEET (R	-2 Exhib	it)		DATE <b>Fel</b>	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 0 <b>6</b> 0	PE NUMBER AND TITLE 0603802A Wea	rrle Veapons	And Mur	nitions A	E NUMBER AND TITLE D603802A Weapons And Munitions Advanced Dev		PROJECT XXXB
COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Eetimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Eetimate	FY 2001 Estimate	Cost to Complete	7948 C
XXXB MK-19 IMPROVEMENTS	752	1246	0	0	0	0	0	0	0	

in engaging single and multiple targets with use of the Traverse and Elevation (T&E) Mechanism and free gun engagement. This device will replicate with high accuracy Simulator for the MK19-3. The Gunnery Trainer is a video style classroom trainer. It is an adaptation of an existing training device that will provide basic gunnery skills Tactical Engagement Simulator is an adaptation of the Multiple Integrated Laser Engagement System (MILES), another existing training device. This device will be used as a means to evaluate the performance of the weapon system and crews in force-on-force training exercises. The Soft Mount is designed to provide a firing platform with improved stability. This effort will result in improved accuracy, faster reaction times, unlimited traverse, and a reduction in training costs through reduced ammunition and resolution the aiming, firing, and fire adjustment of the actual weapon to include hits/misses, trajectory, and flight characteristics of the 40mm ammunition. The Mission Description and Budget Item Justification: This program element covers improvements to the MK19-3 Automatic Grenade Launcher. In addition to consumption and barrel wear. This project focuses on efforts associated with advanced technology development. It demonstrates general military utility, to include investigating soft mounts, this improvement program develops two system-specific training devices: a Gunnery Trainer for the MK 19 and a Tactical Engagement demonstration and validation, of tactical engagement simulation and is correctly placed in budget activity 4.

# FY 1994 Accomplishments:

- Concept formulation/Acquisition strategies (183)
- Survey industry for commercially available technology (234)
  - Trade-off determination (335)

# FY 1995 Planned Program:

- Best Technical Approach for Gunnery Trainer (115)
- Best Technical Approach for Tactical Engagement Simulator (147)
  - Preliminary Request for Proposal for Gunnery Trainer (58)
- Performance specification on Gunnery Trainer (94)
- Milestone VIII for Gunnery Trainer (70)
- Preliminary Request for Proposal for Tactical Engagement Simulator (66)
- Milestone I/II for Tactical Engagement Simulator (70)
- Concept Formulation/Acquisition Strategy for Soft Mount (106)
- Market Survey/purchase of commercially available Soft Mounts (76)
  - Confidence tests for Soft Mount (43)
- Generate Performance Specification for Soft Mount (375)

Page 1 of 3 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ITEI	M JUSTI	FICATIO	N SHE	ET (R-2	Exhibit		DATE		February 1995	96
BUDGET ACTIVITY 4 - Demonstration And Validation	ے			PE NL 060	PE NUMBER AND TITLE 0603802A Weal	TILE Veapons	TITLE Weapons And Munitions Advanced Dev	s Advar	Dept.	1	PROJECT XXXB
• SBIR/STTR (26)											
B. Program Change Summary Previous President's Budget Appropriated Value Current Budget Submit/President's Budget			FY 1994 763 752 752		FY 1995 663 1246 1246	FY 1996	FY 1997				
C. Other Program Funding Summary WTCV, A		FY 1994		FY 1996	FY 1997	FY 1998	FY 1999 FY 2000		FY 2001 I	To Comp	Total Cost
GL3200 Items Less Than \$2.0M			268	693	1056						2017
D. Schedule Profile		FY 1994 2 3	4	1 2	FY 1995 2 3	4	FY 1996 2 3	<b>~</b>	 	FY 1997 2 3	4
Concept formulation/Acquisition strategies		*									
Survey industry for commercially available technology		×									
Trade-off determinations  Best Technical Anoroach for Gunnery			*	*							
Trainer (GT)				, ,							
Concept formulation/Acquisition Strategy for Soft Mount				×							
Market Survey for Soft Mount				×							
Preliminary Request for Proposal for GT Performance specification on GT					××						
Milestone UIII for Gunnery Trainer					×						
Tradiminary Request for Proposal for					<b>×</b>						
Milestone I/II for TES					×						
Small Purchases of Soft Mount					×						
Confidence Test for Soft Mount						; ×					
Performance Specurcation of Soft Mount						<b>×</b>					
			-	Dage 2 of 3 Dages	Pones			ŭ	Evhihit D.0		
				10 4 3X	1 HXES				1011		

UNCLASSIFIED

Item 61



**\$**04

RDT&E PROGRAM ELEMENT/P	AM ELE	EMENT/PR	ROJECT COST BREAKDOWN (R-3)	OST BE	EAKDO	WN (R-3		DATE F.	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	dation			PE NUMBER AND TITLE 0605302A Wea	AND TITLE	ons And N	PENUMBER AND TITLE 0605302A Weapons And Munitions Advanced Dev	Advanced	1	PROJECT XXXB
A. Project Cost Breakdown			FV 1994	İ	FV 100\$	FV 1996	FV 1997			
Other Government Agency Support Program Management Support Contract Support Total			732 20 20 752		1050 136 60 1246					
B. Budget Acquisition History and Planning Information	Planning In	Cormation								
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
STRICOM MIPR NOTATIONS	May 94				732	009				1332
Support and Management Organizations PM Small Arms/ TACOM	tions				20	586				909
Picatinny Ars, NJ Contract Support Organizations TACOM Picatinny Ars, NJ						99				09
Test and Evaluation Organizations: N/A Government Furnished Property: N/A Subtotal Product Development Subtotal Support and Management Subtotal Contract Support	<b>Y Y</b>				732 20	009 986 09				1332 606 60
Suotota l'est and Evaluation Total Project					752	1246				1998
			Page	Page 3 of 3 Pages	5			Exhibit R-3	-3 -3	

505

	RDT&E BUDGET ITEM JUST	EM JUS	TIFICAT	ION SH	EET (R	IFICATION SHEET (R-2 Exhibit)	<u> </u>		DATE <b>Fel</b>	February 1995	96
8ubG	BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logi Adv Dev	TITLE Logistics And Engineer Equipment	And Eng	ineer Eq	uipment		
	COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1906 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Eatimate	FY 2000 Eetimate	FY 2001 Estimate	Coat to Complete	Total Cost
	Total Program Element (PE) Cost	13609	14864	7427	7851	7063	5338	2888	6385	Continuing	Continuing
DG01	Combet Engineer Equipment Advanced Development	3801	9174	0	0	0	0	0	O	0	0
DG10	DG10 Advanced Tactical Power Sources	186	230	136	133	131	174	82	77	Continuing	Continuing
L'011	Advanced Electrical Energy Concepts Advanced Development	1506	812	ZZ.	822	0ZZ	218	900	300	Continuing	Continuing
DG14	DG14 Logistics Support Equipment Advanced Development	<b>323</b>	516	78	86	9	8	<b>6</b>	001	Continuing	Continuing
DICCO	General Support Equipment Advanced Development	198	853	988	008	1467	1462	1789	1970	Continuing	Continuing
DK41	POL Distribution Equipment Advanced Development	790	999	910	02.6	29	88	8	886	Continuing	Continuing
D268	Airdrop Equipment Advanced Development	4022	1224	1463	1498	1502	1507	1400	1696	Continuing	Continuing
0428	Tactical Rigidwall Shelter Advanced Development	924	808	3580	4089	2681	961	1000	1097	Continuing	Continuing
0528	Marine Orientation Log Equipment Advanced Development	463	383	0	0	0	0	0	0	0	0

generators and batteries, potable water, environmental control and petroleum equipment are necessary to improve safety and increase the tactical mobility, operational A. Mission Description and Budget Item Justification: This program supports advanced development of new and improved technologies for combat support and combat service support equipment essential to sustaining combat operations. Advancements in airdrop, rigid wall shelters, marine craft, bridging, electric power capability, lethality and survivability of the first to fight; and to provide for greater sustainment of all combat forces while reducing the logistics support burden.

Page 1 of 33 Pages 506



RDT&E BUDGET ITEM JUSTIFICATION	TEM JUSTIFICATION SHEET (R-2 Exhibit) February	ary
BUDGET ACTIVITY	PE NUMBER AND TITLE	1
4 - Demonstration And Validation	0603804A Logistics And Engineer Equipment -	
	Adv Dev	

1995

# Project DG01 - Combat Engineer Equipment Advanced Development

# FY 1994 Accomplishments:

- Performed theoretical analysis and developed algorithms for Laser Vibration Sensor System (LVSS). (880)
  - Completed preliminary design and designed, fabricated and tested an LVSS prototype. (370)
- Conducted Heavy Dry Support Bridge (HDSB) analysis and upgraded prototype. (824)
  - Conducted HDSB Truck/Trailer study. (462)
- Evaluated HDSB configuration for use in Multi-Role Bridge company. (1265)

# FY 1995 Planned Program:

- Complete validation of LVSS sensor and structural models. (978)
- Complete final design and fabricate LVSS. (2940)
  - Evaluate Medium Assault Bridge. (3918)
- Demonstrate and test Military Load Class 96 Ton (MLC 96) capability for HDSB. (587)
- Prepare HDSB Milestone II documentation and solicitation package for EMD phase contract. (559)
- SBIR/STTR decrement. (192)

# FY 1996 Planned Program:

Program not funded.

# FY 1997 Planned Program:

Program not funded.

# Project DG10 - Advanced Tactical Power Source Advanced Development

# FY 1994 Accomplishments:

- Developed prototype BA-6699 High Pulse Battery for Laser Counter Measures Systems, Ground Laser Locator Designator, Modular Universal Laser Equipment, and Laser Target Designator systems. (86)
- Developed Prototype high rate, low cost laser training battery. (50)
- Developed pre-production Nickel Metal Hydride analog of BB-590 with 50% performance improvement for Program Executive Officer Communications System (50)

# FY 1995 Planned Program:

- Develop prototype throw away pouch battery for Program Manager, MILSTAR (Army) satellite communications devices. (80)
  - Develop second generation Smart Battery for on-line indication of battery life status. (95)

Exhibit R-2

Page 2 of 33 Pages

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

Adv Dev

DATE February 1995

0603804A Logistics And Engineer Equipment -

- Develop safe lithium rechargeable battery for communications and Special Operations Forces. (50)
  - SBIR/STTR decrements. (5)

# FY 1996 Planaed Program:

- Develop an improved rechargeable battery and charger based on the lithium ion battery chemistry for use in the Single Channel Ground and Air norne Radio System (SINCGARS). (40)
- Develop techniques for reducing battery related disposal costs. (40)
- Develop a vehicular mounted battery charging station. (55)

# FY 1997 Planned Program:

- Conduct field test and evaluation of next generation of primary lithium based batteries. (30)
- Begin development of high power battery chemistry with no toxic/hazardous materials. (60)
  - Develop High Energy/High Power throwaway battery for 21st Century Land Warrior. (43)

mobility, sustainability and survivability. This project is scheduled to produce proof-of-principle prototypes supporting tactical electric power procurement, and to reduce Project DG11- Advanced Electrical Energy Concepts Advanced Development: Provides advanced development for electrical energy devices to improve soldier weight and size with reduced signature for diesel powered generators and Power Units/Power Plants rated at 3, 5, 10, 15, 30 and 60 kilowatts (kW).

# FY 1994 Accomplishments:

- Identified critical issues as to cost, Integrated Logistics Support (ILS) and user concerns of solid state controls and composites. (100)
- Initiated development of a lightweight, emerging technology 10 kW APU module. (1225)
  - Evaluated commercial state-of-art variable speed, constant frequency systems. (295)

# FY 1995 Planned Program:

- Demonstrate and test new lightweight 5 kW, 10 kW and 15 kW generator sets. (362)
  - Test variable speed constant frequency components in generator sets. (433)
    - SBIR/STTR Adjustment (17)

# FY 1996 Planned Program:

Evaluate bread-board models of advanced engine technologies. (227)

Page 3 of 33 Pages

Exhibit R-2

item 62

**208** 

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603804A Logistics And Engineer Equipment -	
	Adv Dev	

# FY 1997 Planned Program:

Test commercial, state-of-the-art technologies for insertion to FY 99 buy (223)

# Project DG14 - Logistics Support Equipment Advanced Development

# FY 1994 Accomplishments:

- Completed fabrication and took delivery of two 40-foot container unstuffing Container Cargo Retriever (CCR) prototypes (393)
  - Initiated testing of CCRs at Aberdeen (189)
- Initiated preparation of program documentation for CCR Milestone II (148)
  - Developed CCR stereo vision enhancement. (105)

# FY 1995 Planned Program:

- Complete testing of CCR prototypes (386)
- Complete development of CCR stereo vision enhancement. (30)
  - Conduct CCR Milestone II (89)
    - SBIR/STTR decrement. (11)

# FY 1996 Planned Program:

- Award contract for Visibility Improvements for forklift Carriages (VIC) (67)
- Prepare program documentation for VIC (20)
- Initiate testing of VIC prototypes (10)

# FY 1997 Planned Program:

- Complete testing of VIC prototypes (45)
- Complete materiel change management documentation for VIC (25)
  - Complete production contract package for VIC (20)

Acquisition Strategy: Develop engineering prototype and award competitive contract for production or select NDI equipment based on Market Investigation and FFPs from industry.

# Project DK39 - General Support Equipment Advanced Development

# FY 1994 Accomplishments:

- Investigated alternative refrigerants and developed 36K British Thermal Units per Hour Environmental Control Unit (BTUH ECU). (161)
  - Modified and tested units with selected refrigerants. (120)

Page 4 of 33 Pages

Item 62

Exhibit R. 2

- Completed market investigation of innovative pre-treatment technologies. Initiated evaluation of candidate pretreatment systems under the water purification components. (425)
  - Completed evaluation of biocides for preservation of reverse osmosis elements. Recommended new biocide for incorporation into water purification equipment. (161)
    - Continued high turbidity clarifier evaluation. (28)
- Initiated study of cleaning solutions for reverse osmosis elements. (89)

# FY 1995 Planned Program:

- Fabricate two ECU prototypes, incorporating technology and components developed in previous year. (181)
  - Conduct active noise abatement demonstration on current ECU unit. (100)
- Continue test and evaluation of water treatment technologies including pre-treatment, pumps, controls, and reverse osmosis elements. (484)
  - Complete technical data package for high turbidity clarifier. (70)
    - SBIR/STTR decrement. (18)

# FY 1996 Planned Program:

- Investigate commercial technology applicable to 9K BTUH ECU unit. (181)
- Complete evaluation of water treatment technologies. Integrate into High Capacity Purifier. (804)

# FY 1997 Planned Program:

- Select components and complete initial ECU system design. (178)
- Conduct Milestone I In Process Review for Radiological Water Monitor. (100)
- Perform trade off analysis to determine best technical approach for Radiological Water Monitor. (222)
- Conduct Market Investigation of Radiological Water Monitor. (150)
- Hold Milestone II In-Process Review for the Water Individual Purification System. (75)
- Conduct Milestone I In-Process Review for Mobile Water Lab. (75)
- Initiate contract package for design and fabrication of Mobile Water Lab. (100)

# DK41 - POL Distribution Equipment Advanced Development.

# FY 1994 Accomplishments:

- Completed Standard Army Refueling System (SARS) qualification prototypes and conducted system test (538)
  - Completed SARS design handbook. (61)
- Conducted Milestone I In-Process Review for the Petroleum Quality Analysis System (PQAS). (100)

Page 5 of 33 Pages

510

Exhibit R-2

UNCLASSIFIED

tem 62

RDT&E BUDGET ITEM JUSTIFICATION !	TIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUCGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603804A Logistics And Engineer Equipment -	uipment -
	Adv Dev	

Prepared solicitation package for PQAS Demonstration/Validation Phase. (100)

# FY 1995 Planned Program:

- Design PQAS technology demonstration model. (456)
- Implement/design SARS as part of a demonstration vehicle. (100)
- Prepare Milestone I IPR package for Tactical Fuel Storage and Distribution System (TFSDS), family of pumps and filter separators. (96)
  - SBIR/STTR decrement. (14)

# FY 1996 Planned Program:

- Fabricate and initiate testing of PQAS technology demonstration model. (610)
  - Prepare solicitation package for PQAS EMD Phase. (100)
- Conduct Milestone I IPR for TFSDS family of pumps/filter separators. (100)
- Prepare solicitation package for TFSLS family of pumps/filter separators. (100)

# FY 1997 Planned Program:

- Complete PQAS technology demonstration model testing. (400)
  - Conduct Milestone II IPR for PQAS. (100)
- Design TFSDS integrated pump-filter separator. (420)

Acquisition Strategy: RDT&E followed by Competitive Procurement for all programs covered by DK39 & DK41.

Project D266 - Airdrop Equipment Advanced Development: Conduct accelerated de nonstration and validation of airdrop systems and equipment that will provide advanced airdrop capabilities over a range of altitudes as well as offset distances with emphasis on improved safety and greater precision, balanced with reduced vulnerability of personnel, aircraft, aircrew and equipment.

# FY 1994 Accomplishments:

- Concluded Advanced Development and terminated Low Altitude Retrorocket System (LARRS) which was intended to reduced aircraft vulnerability. (3015)
  - Completed level II technical drawings for LARRS. (1007)

Page 6 of 3 Pages

Exhibit R-2

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

BUDGET ACTIVITY

4 - Demonstration And Validation

PE NUMBER AND TITLE

DATE February 1995

0603804A Logistics And Engineer Equipment Adv Dev

# FY 1995 Planned Program:

- Design, fabricate and begin testing prototype Enhanced Container Delivery System (ECDS) to improve accuracy, enhance load survivability and expand range of operations from high to low altitudes. (1199)
- SBIR/STTR decrement. (25)

# FY 1996 Planned Program:

Conduct combined technical/user testing of the Enhanced Container Delivery System and conclude Advanced Development effort. (1493)

# FY 1997 Planned Program:

Design, fabricate and begin technical testing of prototype Advanced Tactical Parachute System (ATPS) to improve the safety and lethality of 21s' Century airborne assault operations. (1496) Project D428 - Tactical Rigid Wall Shelter Advanced: Develop a family of tactical rigid wall shelters to enhance soldier survivability and sustainability of command, control and communications. These shelters provide highly mobile, joint service platforms for the digitization of the battlefield, medical critical care in a Chemical/Biological (C/B) environment and high tech maintenance.

# FY 1994 Accomplishments:

- Completed design and fabrication of prototype HMMWV and 2-1/2 ton cargo bed covers and completed design of prototype M105 trailer cargo bed cover to improve safety, security and standardization of field-built "hooches". (759)
- Completed fabrication of the 80 decibel (dB) end-wall removable International Standardization Organization (ISO) shelter prototype to increase Electo-Magnetic Interference (EMI) protection and integration capabilities for strategic Command and Control (C2). (70)
  - Completed fabrication of Large Standard Integrated Command Post System (SICPS) shelter for mobile division systems and corps C2 systems. (95)

# FY 1995 Planned Program:

- Complete fabrication and begin testing of M105 cargo bed cover and complete testing of HMMWV and 2-1/2 ton cargo bed covers. (695)
  - Conduct Large SICPS tests: PPQT at Aberdeen Proving Ground and FDTE at Ft. Hood. (94)
    - SBIR/STTR decrement. (17)

# FY 1996 Planned Program:

- Complete final design and fabrication of HMMWV and 2-1/2 ton cargo bed cover prototypes and complete testing and redesign of M105 cargo bed cover. (855)
  - Develop concepts for rigid/soft hybrid shelter for enhanced deployability and habitability for soldiers and equipment. (50)
    - Build and evaluate 5th wheel mounted SICPS Rigid Wall Shelter (RWS). (775)

Page 7 of 33 Pages

Exhibit R-2

Item 62

512

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R.2 Fxbibit)	CATION	SHEET (R	-2 Exhibit		DATE
BUDGET ACTIVITY		IPE NIMABED AND TITLE	TIT! 6		repruary 1995
4 - Demonstration And Validation		0603804A Adv Dev	Logistics A	Senomber And Logistics And Engineer Equipment - Adv Dev	uipment -
Complete technical testing of large SICPS shelter, refurbish a	helter, prepare	shelter, prepare manuals, begin operational test. (1900)	perational test.	1900)	
FY 1997 Planned Program:  • Complete final testing of HMMWV and 2-1/2 ton cargo bed trailer. (500)	over and compl	lete fabrication ar	id begin retest of	final design of prototy	cover and complete fabrication and begin retest of final design of prototype cargo bed cover for the M105
<ul> <li>Complete operational test, conduct Milestone I/III and type classify the Large SICPS Shelter. (900)</li> <li>Prepare contract scope of work for the rigid/soft hybrid shelter and award first phase. (482)</li> <li>Award contract for the design and development of next generation survivable SICPS RWS. (2207)</li> </ul>	assify the Large and award firs tion survivable	s SICPS Shelter. at phase. (482) s SICPS RWS. (2	(900)		
<ul> <li>D526 - Marine Orientation Log Equipment Advanced Development</li> <li>FY 1994 Accomplishments:</li> <li>Developed communication, electronics, and navigation (CEN) suites for watercraft (185)</li> <li>Developed Lighter Amphibian Resupply Cargo 60 Ton LARC XL / Roll On Roll Off In</li> </ul>	ment suites for wate XL/Roll On	pment N) suites for watercraft (185) RC XL / Roll On Roll Off Interface (278)	æ (278)		
FY 1995 Planned Program:  Concept development of a Containerized Machine Shop (CMS) (210)  Proof of concept design of a transportable ocean dredge (165)  SBIR/STTR decrement. (8)	4S) (210) )				
B. Program Change Summary					
Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SBIR/STTR (-244)	EY 1994 15926 15926 -2317	<u>5X 1995</u> 5581	FY 1996 7924	EY 1997 8353	
O. Reprogrammed (-2073)  Current Budget Estimate Submission	13609	14664	7427	7851	

Page 8 of 33 Pages **\$13** 

Exhibit R-2

RDT&E BUDGET ITEM JUSTII	TSUC M	<b>IFICATI</b>	IN SH	FICATION SHEET (R-2 Exhibit)	2 Exhibit	a		DATE	Eshpiso, 100K	306
BUDGET ACTIVITY 4 - Demonstration And Validation			PE N	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	TITLE -ogistics	And Eng	jineer Eq	uipment	, nai	PROJECT DG01
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Eatimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Eedimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
DG01 Combat Engineer Equipment Advanced Development	3601	8174	0	0	0	0	0	0	0	8
C. Other Program Funding Summary:										
RDTE, A Budget Activity 5 PE 0604804A, Project DH01, Combat Engineer	FY 1994 4623	FY 1995 2460	FY 1996 9691	FY 1997 10089	FY 1998 7999	FY 1999 1788	FY 2000 100	FY 2001 100	Compl Cont	Cont Cont
Equipment Engineering Development G82400 Heavy Dry Support Bridge							10264	10551	117112	
D. Schedule Profile:										
-	FY 1994	4 4	1 2	FY 1995	4	FY 2	19% 3 4	-	FY 1997 2 3	4
LVSS analysis and algorithms LVSS design and prototype HDSB analysis and upgraded prototype HDSB Truck and Trailer study HDSB configurations in Bridge Company LVSS sensor and structure models LVSS final design and fabrication Demonstrate and test MLC 96 capability for HDSB HDSB Milestone II and EMD phase contract preparation Evaluate Medium Assault Bridge		****	Pare 9 of 33 Pages	3 Pages	× × × ×		×	Exhibit R-2	2	
			514	_						Item 62

RDT&E PROGRAM ELEMENT/PROJECT	RAM EL	EMENT/F	1 - 1	COST BR	EAKDO	<b>BREAKDOWN (R-3)</b>	()		DATE F.	February 1995	395
BUDGET ACTIVITY 4 - Demonstration And Validation	on And Val	idation			PE NUMBER AND TITLE 0603804A Logi Adv Dev	AND TITLE	tics And E	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	quipmen		PROJECT DG01
A. Project Cost Breakdown.	ikdown:										
Hardware Development Evaluate Medium Assault Bridge Test and Evaluation Government Engineering and Support Government Program Support Miscellaneous Total	t ault Bridge ing and Suppor Support	t		FY 1994 2671 0 205 695 120 110 3801	<b>∐</b>	FY 1995 3364 3918 728 650 250 264 9174	FY 1996	FY 1997			
B. Budget Acquisition History and Planning Information:	n History and	Planning Inf	ormation:								
Performing Organizations	ıtions										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Product Development Organizations TARDEC, In-House	Organizations In-House	Various				2000	4591	0	0	0	1659
ginia y	CPFF	9502				1000	3500	0	0	0	4500
Support and Management Organizations - None	nent Organizati	ons - None									
Test and Evaluation Organizations - None	rganizations -	None									
				Раке	Page 10 of 33 Pages	ડ			Exhibit R-3	k-3	
					515		ì				Item 62

RDT&E PR	RDT&E PROGRAM ELEMENT/PROJECT	EMENT/F		COST BI	REAKDO	COST BREAKDOWN (R-3)			DATE	February 1995	1995
BUDGET ACTIVITY 4 - Demonstration And Validation	ation And Va	iidation			PE NUMBER / 0603804. Adv Dev	PE NUMBER AND TITLE  0603804A Logistics And Engineer Equipment Adv Dev	ics And E	ingineer E	quipmen		PROJECT DG01
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performin g Activity EAC	Project Office EAC	Total Prior to EY 1994	EY 1994	FY 1995	FY 1996	EY 1997	Budget to Complete	Total
Miscellaneous VTTRO, Inc TECOM ARL BRTRC, Inc Various Contractors SBIR/STTR	CPFF MIPR MIPR CPFF CPFF	9403 9507 9401 Varinus Various				574 0 94 100 33	0 598 150 98 45 192 1083	00000 00	00000 00		574 598 244 198 78 192
Government Furnished Property: N/A Subtotal Product Development Subtotal Support and Management - NC Subtotal Test and Evaluation - NONE Subtotal Miscellaneous Total Project	Soverament Furnished Property: N/A Subtotal Product Development Subtotal Support and Management - NONE Subtotal Test and Evaluation - NONE Subtotal Miscellaneous Total Project	N/A - NONE			Total Prior to FY 1994	FY 1994 3000 801 3801	FY 1995 8091 1083 9174	FY 1996	FY 1997	Budget to Complete	Total Program
				Page	Pape 11 of 33 Papes 516	<i>s</i> <sub>2</sub> ,			Exhibit R-3	<del>2</del> -3	Item 62

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE Fet	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logi Adv Dev	PENUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	And Eng	ineer Eq	uipment		PROJECT DG10
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG10 Advanced Tactical Power Sources	200	230	<del>8</del>	133	131	174	82	72	Continuing	Continuing
C. Other Program Funding Summary: N/A										
D. Schedule Profile: Project provides scientific test and evaluation to USACECOM RDEC in battery programs. Level of effort program necessitates fourth quarter milestones/reviews.	st and evalua	ition to USA	CECOM RI	EC in batte	ry programs.	. Level of et	fort prograv	n necessitate	es fourth qua	rter
•	FY 1994	•	<u>i.</u> ,	FY 1995	•	FY 1996	92 °	•	FY 1997	
Prototype BA-6699 H.P. Battery Develop Laser Training Battery Develop Nickel Metal Hydride Battery Prototype disposable Pouch Battery Develop Second Gen. Smart Battery Develop Safe Lithium Recharge Battery Develop Rechargeable Battery & Recharger for SINCGARS Investigate reduction of battery related disposal costs Develop charging station for vehicular batteries Field test & eval. of next gen. Lithium batteries Develop High Energy/High power battery for 21CLW			· ×	•	· · ×	•	· × ×	× ×	1	×
			Pare 12 of 33 Pares	3 Pages				Exhibit R-2	ý	

OGRAM ELEMENT/PROJECT	COST BREAKDOWN (R-3)	(2-3)	DATE	February 1995	
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603804A Logi Adv Dev	E jistics And Er	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	PROJECT	0 0
A. Project Cost Breakdown					
	186 EY 1995 186 225	FY 1996 135	FY 1997 103 30		
SBIR/STTR Adjustment Total	5 186 230	135	133		<u></u>
B. Budget Acquisition History and Planning Information: N/A					
					-
					<u></u>
			:		
7.98	rage 13 of 33 rages		Exhibit R-3	R-3	7
	\$18			Ite	Item 62

RDT&E BUDGET ITEM JUSTI	M JUSTI		ON SHE	ET (R-2	FICATION SHEET (R-2 Exhibit)	(1)		DATE <b>Fel</b>	February 1995	395
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logi Adv Dev	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	And Eng	ineer Eq	uipment	. ,	Р <b>R</b> оЈЕСТ <b>DG11</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG11 Advanced Electrical Energy Concepts Advanced Development	1585	812	722	822	022	218	300	300	Continuing	Continuing
C. Other Program Funding Summary	FY 1994	FY 1995	FY 1996	EY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total
RDT&E: PE 064804/D194 OPA BA 3: Generators and Associated Equipment (MA9800)	1506 24797	1989 25206	833 13761	299 15715	270 15865	286 16493	38200	723 65205	Cont	6625
D. Schedule Profile	FY 1994 2 3	4	1 2 F	FY 1995 2 3	4	FY 1996 2 3	36 8 4	-	FY 1997 2 3	4
Identify critical issues as to cost, ILS and user concerns of solid state controls and composites Initiate development of a lightweight, emerging technology 10kW APU module Evaluate commercial state-of-art variable speed, constant frequency systems Demonstrate & test new lightweight 5kW, 10kW & 15kW generator sets Test variable speed constant frequency components in generator sets Evaluate bread-board models of advanced engine technologies  Test commercial, state-of-art technologies for insertion to FY 99 buy	*	* *		×	×		×		×	
			Pape 14 of 33 Papes	3 Pages				Exhibit R-2	ņ	

RDT&E PROGRAM ELEMENT/PROJECT	OGRAM EL	EMENT/		COST BREAKDOWN (R-3)	REAKDO	WN (R-3			DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	ation And Va	lidation			PE NUMBER AND TITLE 0603804A LOGI Adv Dev	AND TITLE TA LOGIST	ics And E	TITLE Logistics And Engineer Equipment -	quipmen		PROJECT DG11
A. Project Cost Breakdown	теакфочн			FY 1994		FV 1004	77 79 79	FV 1997			
Hardware Development Test and Evaluation	ment			1200		5 <del>2</del>	91	001			
Government Engineering and Support	neering and Suppo	Į,		105	<b>v</b>	95 27	50	73			
Miscellaneous SBIR/STTR Adjustment	tment			<b>2</b> 1		5 t T	22	25			
Total				1595		812	727	223			
B. Budget Acquisition History and Planning Information	sition History and	d Planning In	<u>formation</u>								
Performing Organizations	nizations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	EY 1995	EY 1996	EY 1997	Budget to Complete	Total
Product Development Organizations CPFF/TBD 2Q95 Support and Management Organizations - None	rent Organizations CPFF/TBD rgement Organizat	2Q95 tions - None	200	200		1595	812	727	223		
Test and Evaluation Organizations - None	on Organizations -	None									
Government Furnished Property: None	nished Property:	None									
				Page	Page 15 of 33 Pages				Axbibit	Ž.	
					630						Item 62

520

RDT&E BUDGET ITEM JUSTI	M JUSTIF	-ICATI(	ON SHE	ET (R-2	FICATION SHEET (R-2 Exhibit)	a a		DATE F.	February 1995	966
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logi	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	And Eng	ineer Eq	uipment		PROJECT DG14
COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1987 Estimato	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
DG14 Logistics Support Equipment Advanced Development	<b>8</b> 2	516	1.6	8	20	8	8	100	Continuing	Continuing
C. Other Program Funding Summary										
OPA. BA 3	FY 1994	EY 1995	FY 1996	FY 1927	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
M41200 All Terrain Lifting Articulating System ML5365 Items Less Than \$2.0M	5816	4694	14403 2843	16589 2772	1827	1826	1988	1989	Cont	30992 Cont
D. <u>Schedule Profile</u>	FY 1994 2 3	4	1 2 E	FY 1995 2 3	4	FY 1996 2 3	% 3 4	-	FY 1997 2 3	4
Delivery of 40-foot CCR prototypes  Initiate testing of CCRs  Initiate preparation of PMD for CCR Milestone II  Complete testing of CCR prototypes  Conduct CCR Milestone II  Contract for Visibility Improvements for forklift Carriages (VIC)  Prepare program documentation for VIC  Initiate testing of VIC prototypes  Complete testing of VIC prototypes  Complete materiel change management documentation for VIC  Complete production contract package for VIC	X• X• Tiages (VIC)	*	×	×	×	×			×××	××
		P	Page 16 of 33 Pages	Pages				Exhibit R-2	2	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	SRAM ELE	EMENT/P	ROJECT C	OST BR	EAKDO	WN (R-3			DATE	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	on And Val	idation			PE NUMBER AND TITLE 0603804A Logi	AND TITLE A Logist	ics And E	PENUMBER AND TITLE 0603804A Logistics And Engineer Equipment Adv Dev	quipmen		PROJECT DG14
A. Project Cost Breakdown Hardware Development Test and Evaluation Government Engineering and Support Government Program Support Miscellaneous Total	ukdowa ut ning and Suppor	<b>.</b>		EY 1994 503 189 105 38		EY 1995 330 70 105 11 516	67. 1996 97	FY 1997 90			
B. Budget Acquisition History and Planning Information.  Performing Organizations  Contractor or Contract  Government Method/Type Award or Perform  Performing or Funding Obligation Activity  Activity Vehicle Date E	ations  Contract  Method/Type  or Funding	Planning Info Award or Obligation Date	Performing Activity  EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Product Development Organizations - None Support and Management Organizations - None Test and Evaluation Organizations - None Miscellaneous TARDEC In-House Various Caterpillar, Inc CPFF 0193 Ingersoll-Rand, Inc CPFF 0293 TECOM MIPR Various Minor Adjustments SBIR/STTR	Organizations - nent Organizati  Organizations - Drganizations - CPFF CPFF CPFF MIPR	- None ons - None None Various 0193 0293 Various		G G	Dog 17 of 23 Dags	498 45 65 189 0	435 0 0 70 0	60000			
				3007	522	2				2	Item 62





RDT&E PROGRAM ELEMENT/PROJECT	COST BREAKDOWN (R-3)	<b>EAKDO</b>	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603804A Logi	AND TITLE  LA Logist  ,	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	ingineer E	duipmen		PROJECT DG14
Government Furnished Property: None							
	Total Frior to $\overline{F}/1994$	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development - None Subtotal Support and Management - None Subtotal Test and Evaluation - None Subtotal Miscellaneous		835	516	97	8	Cont	Coa
Total Project		835	516	6	8		
			·				
Pa	Page 18 of 33 Pages	es			Exhibit R-3	?-3	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TSUC M	FICATI	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation		] [	PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logi Adv Dev	эттге Logistics And Engineer Equipment -	And Eng	ineer Eq	uipment		PROJECT DK39
COST (in Thousands)	FY 1984 Actual	FY 1985 Estimate	FY 1926 Eatimate	FY 1907 Estimate	FY 1986 Estimate	FY 1990 Eetimate	FY 2000 Estimate	FY 2001 Estimate	Coat to	Total Cost
DK39 General Support Equipment Advanced Development	\$	8	88	008	1467	1482	1780	1970	Continuing	Continuing
C. Other Program Funding Summary									•	Ē
A LOS LOS A B A B A COLOGA A	FY 1994	FY 1995	FY 19%	FY 1997	FY 1998	FY 1999	<b>EY 2000</b>	<b>FY 2001</b>	Compl	
DL39 General Support Equip Eng Dev	2682	1587	1649	1734	2205	2442	2199	2219	Cont.	Cont.
D. Schedule Profile	FY 1994		įr,	FY 1995		FY 1996	*		FY 1997	
	2 3	4	1 2	ю	4	7	3	-	2 3	4
Investigate alternative refrigerants &	*						٠			
develop 36K BTUH ECU.    Modify and test units with selected		*								
refrigerants.  Complete market investigation of innovative		×								
pre-treatment technologies. Initiate evaluation of candidate pretreatment systems										
under the water purification components.  Complete evaluation of biocides for		*								<del>.,                                      </del>
preservation of reverse osmosis elements and										
purification equipment.										
			Page 19 of 33 Pages	3 Pages				Exhibit R-2	2	
			524							Item 62

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET	R-2 Exhi	bit)		DATE	E February 1995	v 1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603804 A Logi	ND TITLE	TITLE Logistics And Engineer Equipment	Inginee	r Equip	ment -	PROJECT DK39
D. Schedule Profile (continued): FY 1994	FY 1992		E	FY 1996		FY 1997	7.
1 2 3 4	1 2 3	4	1 2	က	4	1 2	3 4
Continue high turbidity clarifier evaluation.  Initiate cleaning solutions study for RO elements.  Fabricate two ECU prototypes, incorporating technology and components developed		×					
in previous year.  Conduct active noise abatement	×						
demonstration on current ECU.  Continue T&E of water treatment technologies  including pre-frequent summe controls		×		•			
and reverse osmosis elements.  Complete TDP for high turbidity clarifier.  Investiga e commercial technology for		×			×		
Complete evaluation of water treatment technologies & integrate into High Capacity Purifier.					×		;
Conduct Will IPR for Radiological Water Monitor.  Perform rade off analysis to determine  RTA for Radiological Water Monitor.						×	××
Conduct MI of Radiological Water Monitor Conduct MSI IPR for Mobile Water Lab. Initiate contract package for design and falirication of Mobile Water Lab.						×××	
			-				
Pas	Page 20 of 33 Pages				EX	Exhibit R-2	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	GRAM EL	EMENT/P	ROJECT	OST BR	EAKDO	WN (R-3	<u></u>		DATE Fe	February 1995	98
BUDGET ACTIVITY 4 - Demonstration And Validation	ition And Va	lidation			PE NUMBER AND TITLE 0603804A Logi Adv Dev	AND TITLE  A Logist	iics And E	PE NUMBER AND TITLE  0603804A Logistics And Engineer Equipment - Adv Dev	quipment		PROJECT DK39
A. Project Cost Breakdown  Hardware Development  Test and Evaluation  Government Engineering and Support  Government Program Support	reakdown sent 1 cering and Suppo	¥		EY 1994 550 250 155 29	Σ	EV 1995 500 202 125 26	EY 1996 600 129 145 111	FY 1997 628 130 17 17 900			
B. Budget Acquisition History and Planning Information Performing Organizations	ition History and izations	d Planning Inf	<u>ormation</u>	\$		3	}				
Contractor or Government Performing Activity	Contract Method/Type or Funding <u>Vehicle</u>	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to	EY 1994	EY 1995	EY 19%	EY 1997	Budget to Complete	Total
Product Development Organizations	ent Organizations	- NONE									· · · · · · · · · · · · · · · · · · ·
Support and Management Organizations - Test and Evaluation Organizations - NONE	gement Organiza	tions - NONE - NONE	西								
Miscellaneous TARDEC, CECOM Contractors (TBD) NFESC	In-House CPFF MIPR	Various 9312 9402				264 151 569	373 80 400	385 200 400	250 477 173		
Government Furnished Property: N/A	lished Property:	N/A		Dage	Page 21 of 33 Pages				Exhibit R-3	<u>ش</u> پ	
					526	3					Item 62

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BRE	AKDOV	VN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	PENUMBER AND TITLE 0603804A Logistics And Engineer Equipment -	D TITLE <b>Logisti</b>	cs And E	ngineer E	quipment		PROJECT DK39
	Adv Dev						
		FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development - NONE Subtotal Support and Management - NONE Subtotal Test and Evaluation - NONE							
Subtotal Miscellaneous Total Project		984	853	985	006	Cont	Cont
						٠	
							<del></del>
Pag	Page 22 of 33 Pages.				Exhibit R-3	<b>}-3</b>	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logi	Logistics And Engineer Equipment	And Eng	ineer Equ	uipment	O	PROJECT DK41
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1986 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1989 Catimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
DK41 POL Distribution Equipment Advanced Development	88.	8	010	828	ž	8	8	88	Continuing	Continuing
C. Other Program Funding Summary									F	Todas
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	S
RDTE, A BA 5 PE 64804 DL41 POL Distribution Equip Eng Dev	1424	1457	1220	1070	1193	1220	1199	1197	Cont.	Cont.
D. Schedule Profile	FY 1994	4	1 2	FY 1995 2 3	4	FY 1996 2 3	96 E 4		FY 1997 <sup>2</sup>	4
Complete SARS qualification prototypes and conduct system test. Complete SARS design handbook. Conduct MS I IPR for PQAS. Prepare solicitation package for PQAS Demonstration/Validation Phase. Design PQAS technology demo model. Implement/design SARS for demo vehicle. Prepare MS I IPR package for TFSUS. Fabricate/initiate testing of PQAS tech demo model. Prepare solicitation pkg for PQAS EMD Phase. Conduct MS I IPR for TFSDS family of pumps/filter separators. Prepare solicitation pkg for TFSDS family of pumps/filter separators. Complete PQAS technology demonstration model testing. Complete PQAS technology demonstration model testing. Conduct MS II IPR for PQAS. Design TFSDS integrated pump-filter separator.	I. er separators. ss/filter separatestesting.	× × × × × × × × × × × × × × × × × × ×		×	××		××× ×		*	××
			Page 23 of 33 Pages	33 Pages				Exhibit R-2	7	
			528							Item 62
			UNCLASSIFIED	SIFIED						

RDT&E PROGRAM ELFMENT/PROJECT	EL FMENT/	B	COST BR	EAKDO	BREAKDOWN (R-3)	<u>~</u>		DATE	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	Validation			PE NUMBER AND TITLE 0603804A Logi Adv Dev	AND TITLE	tics And E	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	quipmen		PROJECT DK41
A. Project Cost Breakdown  Hardware Development Test and Evaluation Government Engineering and Support Government Program Support Miscellaneous Minor Adjustment Total	pport		FY 1994 387 50 279 50 0 33	Σī	EY 1995 530 20 91 25 0	FY 1996 715 50 95 50 0	FY 1997 725 50 95 50 0			
Performing Organizations Contractor or Contract Government Method/Type Aw Performing or Funding Obl Activity Vehicle Dat Froduct Development Organizations Support and Management Organizations	pe Award or Obligation Date  One NONE izations NONE	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	EY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
valuation C cous s (TBD)	ns NONE Various 9312				329	111	135	135	cont	cont
TEXCOM MIPR ARL MIPR 940 Government Furnished Property: N/A	9404 ty: N/A		Pape	Page 24 of 33 Pages	37 es.	8	10	60 Exhibit R-3	cont	cont
				529						Item 62

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	SOST BR	EAKDO	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603804A Logi	AND TITLE  A Logist	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	ngineer E	quipmen		PROJECT DK41
Subtotal Product Development - NONE Subtotal Support and Management - NONE Subtotal Test and Evaluation - NONE Subtotal Miscellan: rus Total Project	Total Prior to EY 1994	FY 1994 799 799	EY 1995 666 666	EY 1996 910 910	EY 1997 920 920	Budget to Complete	Total
Page	Page 25 of 33 Pages	s <sub>c</sub>			Exhibit R-3	<u> </u>	
	430					i	Item 62

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit	<b>a</b>		DATE	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NL 060 Adv	PE NUMBER AND TITLE 0603804A Logi	Logistics And Engineer Equipment -	And Eng	ineer Eq	uipment		PROJECT D266
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D288 Airdrop Equipment Advanced Development	4022	1224	1483	- 84	1502	1507	1489	1696	Continuing	Continuing
C. Other Program Funding Summary: N/A										
D. Schedule Profile			ļ							
Concluded LARRS Advanced Development Design and fabricate Enhanced Container Delivery System Conclude advanced development of the Enhanced Container Delivery System Design, fabricate and start testing of Advanced Tactical Parachute System		<b>▼</b> *	7	m	<b>→</b> ×		<b>.</b> ₩	-	3	* ×
		~	Dana 2K of 33 Danas	2 Dece 6				ה ה ני	ć	
			531	2						Item 62

RDT&E PROGRAM ELEMENT/PROJECT	OGRAM EL	EMENT/F		COST BE	REAKDO	<b>BREAKDOWN (R-3)</b>			DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	ation And Va	lidation			PE NUMBER AND TITLE 0603804A Logi	t AND TITLE 4A Logist	tics And E	этте Logistics And Engineer Equipment -	quipment		PROJECT D266
A. Project Cost Breakdown	*reakdown						Š				
Primary Hardware Development Total	Development			FY 1994 4022 4022		FY 1995 1224 1224	FY 1996 1493 1493	FY 1997 14% 14%			
B. Budget Acquisition History and Planning Information	sition History and	d Planning In	formation								
Performing Organizations	nizations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	FY 1996	EY 1997	Budget to Complete	Total
Product Development Organizations Natick, AAI Corp, Pioneer Aerospace,	ent Organizations	_	<b>V</b> /X	X/X	19,438	3,420	943	1,313	1,316	Cont	Cont
Support and Management Organizations Natick, GTS, GEO	igemen† Organiza( )	tions	N/A	N/A	428	162	53	73	73	Cont	Cont
Test and Evaluation Organizations YPG, APG, EGLIN AFB, ABSOTD, TECOM	on Organizations		N/A	¥Z	1,323	440	228	107	107	Cont	Cont
Government Furnished Property: N/A	nished Property:	N/A									
				Page	Page 27 of 33 Pages	es.			Exhibit R-3	<b>?</b> -3	
					532						Item 62

532



RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603804A Logi Adv Dev	AND TITLE A Logisti	PENUMBER AND TITLE  0603804A Logistics And Engineer Equipment - Adv Dev	ngineer E	quipment	,	PROJECT <b>D266</b>
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1994 19438 428 1323 21189	EY 1994 3420 162 440 4022	FY 1995 943 53 228 1224	EY 1996 1313 73 107 1493	EY 1997 1316 73 107	Budget to Complete Cont Cont Cont	Total Program Cont Cont Cont
Pos	Page 28 of 33 Pages	<b>ક</b>			Exhibit R-3	દ-	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE Fet	February 1995	968
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Adv	PE NUMBER AND TITLE 0603804A Logic Adv Dev	ntle .ogistics	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	ineer Eq	uipment		PROJECT <b>D428</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
D428 Tactical Rigidwall Shelter Advanced Development	824	908	3580	4089	2881	28	1089	1097	Continuing	Continuing
C. Other Program Funding Summary									Ę	F
OPA BA 2: Standard Integrated Command Post	FY 1994	FY 1995 9531	FY 1996 28914	FY 1997 27360	FY 1998 27638	FY 1999 24760	FY 2000 19884	FY 2001 14916	Compl	Cont
(DC 5702) OPA BA 3: Standard Integrated Command Post (MX1010)	20250									
D. Schedule Profile	Y 199	•	<u>τ</u> , ,	Y 199	•	FY 1996			7 199	
	2	4	1 2	m	4	7	3	_	3	4
Complete design and fabrication of prototype HMMWV and 2-1/2 ton cargo bed cover		*								
Begin testing of M105 cargo bed cover Complete TT of large SICPS shelter				×		×				
Complete testing and redesign of M105						!	;			
cargo bed cover Complete testing of HMMWV and 2-1/2							×			
ton cargo bed cover  Miletone IIII and TC large CICDS										×
shelter										×
		1	Page 29 of 33 Pages	3 Pages				Exhibit R-2	2	
			7 0 3							frem 62

534 UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT	GRAM ELI	EMENTA	PROJECT	COSTB	<b>BREAKDOWN (R-3)</b>	WN (R-	<b>□</b>		DATE Fe	February 1995	195
BUDGET ACTIVITY 4 - Demonstration And Validation	ition And Val	lidation			0603804, Adv Dev	PE NUMBER AND TITLE 0603804A Logis: Adv Dev	tics And E	PENUMBER AND TITLE OG03804A Logistics And Engineer Equipment - Adv Dev	quipmen		PROJECT <b>D428</b>
A. Project Cost Breakdown	eakdown:										
Primary Hardware Development	<b>Development</b>			FY 1994 747		FY 1995 357	FY 1996 1661	FY 1997 2565	<b>N</b> 146 :		
Program Management Support SBIR/STTR Adjustment	n ent Support ment			11	0 771	300 132 17	1500 419	925 599	<b>.</b> .		
Total				924	<b>≠</b>	908	3580	4089			
B. Budget Acquisition History and Planning Information:	tion History and	Planuing In	formation.								
Performing Organizations	izations										
Contractor or Government Performing	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performin g Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations Natick, Gichner, Plastics Research	nt Organizations				13494	747	374	1661	2565	Cont	Cont
Corp, Brunswick, DBA, Chemfab Support and Management Organizations Natick, GTS, GEO	ement Organizati	ions			3374	741	132	419	\$99	Cont	Cont
Test and Evaluation Organizations YPG, TECOM, CSTA, TEXCOM	n Organizations				7229	0	300	1500	925	Cont	Cont
Government Furnished Property: N/A	ished Property:	N/A									
				Page	Page 30 of 33 Pages	es			Exhibit R-3	-3	

RDT&E PROGRAM ELEMENT/PROJECT COST B	COST BREAKDOWN (R-3)	WN (R-3			DATE	February 1995	966
BUDGET ACTIVITY	PE NUMBER AND TITLE	AND TITLE					PROJECT
4 - Demonstration And Validation	0603804	0603804A Logistics And Engineer Equipment -	ics And E	ngineer E	quipment		D428
	Adv Dev						
	Total						
	Prior to	7001	100	75	7001	Budget to	Total
Subtotal Product Development	13494	747	374	15.2	78,		Conf
Subtotal Support and Management	3374	171	132	419	299	3	3 3
Subtotal Test and Eva uation	7229	0	300	1500	925	S	
Total Project	24097	924	908	3580	4089	Cont	Cont
	Pore 27 of 22 Dates				֓֞֞֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓		
	X 0 1 00 00 10 00 3	23					
	414						Item 62

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATI	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	98
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Adv	PENUMBER AND TITLE 0603804A Logi Adv Dev	ve number and title 0603804A Logistics And Engineer Equipment Adv Dev	And Eng	ineer Eq	uipment		PROJECT <b>D526</b>
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1986 Estimate	FY 1997 Estimata	FY 1986 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D526 Marine Orientation Log Equipment Advanced Development	463	363	0	0	0	0	0	0	0	0
C. Other Program Funding Summary									To	Total
ODA RA 3	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
RO9800 Roll On/Roll Off Discharge Platform		993								993
MA0900 LARC-XL SLEP							6989	6989		13918
D. Schedule Profile	r 199	,	<b>tr.</b> (	3661 X	•	FY 1996		•	FY 1997	•
CMS Contract Award (option) In-process Review Concept Acceptance	<b>6</b>	₹		r ~ ×	<del>-</del> ×	7	~ *	<b>-</b>	۶	₹
Dredge Contract Award (option) In-process Review Concept Acceptance				×	×	×				
			Page 32 of 33 Pages	3 Pages				Exhibit R-2	-2	

RDT&E PROGRAM ELEMENT/PROJECT	GRAM EL	EMENT/F		COST BREAKDOWN (R-3)	EAKDO	WN (R-3			DATE F	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	tion And Val	lidation			PE NUMBER AND TITLE 0603804A Logi Adv Dev	tand title 4A Logist v	PE NUMBER AND TITLE 0603804A Logistics And Engineer Equipment - Adv Dev	ingineer E	quipmen		PROJECT D526
A. Project Cost Breakdown Contractor Engineering and Support Government Program Support Total	<u>cakdown</u> ing and Support n Support			EY 1994 417 463		EY 1995 343 40 383	FY 1996	EY 1997			
B. Budget Acquisition History and Planning Information	ion History and	Planning Int	ormation								
Performing Organizations	zations										
Contractor or Government Performing	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	EY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations Miscellaneous SS-FP	nt Organizations SS-FP		·			224	218				474
Support and Management Organizations Naval Surface Warfare Ctr Test and Evaluation Organizations	Entent Organizations  Organizations	Suo				193	125				350
Government Furnished Property: N/A	shed Property:	N/A			Total Price to						T. S. C.
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	velopment 1 Management				FY 1994	FY 1994 417 46	FY 1995 343 40	FY 1996	FY 1997	Complete	Program 760 86
Total Project	arua il o					463	383				846
				Page :	Page 33 of 33 Pages	S.			Exhibit R-3	<b>⊹</b> .3	
					538						Item 62

**238** 

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SOF WE	TIFICAT	HS NOI.	EET (R.	2 Exhib	it)		DATE <b>Fel</b>	February 1995	95
800g	BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060	PE NUMBER AND TITLE  0603805A Cmbt Svc Spt Comp Sys Eval And Anal	mbt Svc	Spt Com	ip Sys Ev	/al And ⊿	∖nal	
	COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	21525	18635	13969	13561	8083	8151	0	0	Continuing	Continuing
600	D091 Combat Service Support Control System	20601	18088	12404	11489	61:15	6157	0	0	0	138539
0246	D246 Tactical Communications System-Advanced Development	824	448	1566	2082	1948	1994	0	0	Continuing	Continuing
D2G1	D2GT CSSCS Operational Test	0	91	0	0	0	0	0	0	0	91
	The state of the s		10001	Combas C	- Prop the Combat Comba	Janes 1		Boo settiment	motor mintom	decioned to	againt the

A. Mission Description and Budget Item Justification: Project D091, the Combat Service Support Control System, is a computer software system designed to assist the and resource management. CSS control centers must provide a rapid decision support capability and supportive information to commanders more quickly than is possible Project D246, Tactical Communications System - Advanced Development, provides for insertion of proven communications technology from program element 0602782A, Combat Service Support (CSS) Commander and his staff to rapidly collect, store, analyze, and disseminate CSS information to support the functions of command, control Evaluation (IOT&E) of CSSCS. The projects in this program element include research efforts that support the engineering and manufacturing development phases of the with the present manual systems. This program develops the CSS battlefield functional area (BFA) node of the Army Tactical Command and Control System (ATCCS). amplifiers and couplers, and packet appliqués used to increase network efficiency. Project D2GT, CSSCS Operational Test supports planned Initial Operational Test & project AH92 exploratory development into advanced development. Examples of these potential programs are the Multiband, Multimode Radio, high power solid state acquisition strategy and are therefore correctly placed in Budget Activity 5.

system in five versions, of which two have been completed and the third completed IOT&E in September 1994. Versions 4 and 5 will be developed and fielded as annual centers must provide a rapid decision support capability and supportive information of commanders more quickly than is possible with the present manual systems. This Project D091, Combat Service Support Control System. The CSSCS is a computer software system designed to assist the Combat Service Support (CSS) Commander program develops the CSS battlefield functional area (BFA) node of the Army Tactical Command and Control System (ATCCS). Acquisition strategy is to develop the and his staff to rapidly collect, store, analyze, and disseminate CSS information to support the functions of command, control and resource management. CSS control capability packages. Versions 4 and 5 will be developed under the Army Global Command and Control System (AGCCS) contract awarded in December 1994.

# FY 1994 Program Accomplishments:

- Concluded Limited User Test (LUT) (1500)
- Continued full-scale development of Version 3 (12600)
  - Conducted IOT&E (3000)
- Continued prototyping Version 4 (1501)
  - ATCCS III Testing Support (2000)

Exhibit R-

Page I of II Pages

#### February 1995 0603805A Cmbt Svc Spt Comp Sys Eval And Anal DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 4 - Demonstration And Validation FY 1995 Planned Program BUDGET ACTIVITY

- Complete development of Version 3 software (12930)
  - Begin development of Version 4 (2400)
- Prepare documentation and conduct ASARC III & C31 Committee Review (1000)
- Prepare and conduct Version 4 PDR and CDR (1405)
- Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (361)

# FY 1996 Planned Program

- Complete Version 3 software (4500)
- Continue Version 4 software development (5944)
- Conduct Version 4 Technical and Customer Tests (1000)
- Prepare and conduct PEO IPR on Version 4 (960)

# FY 1997 Planned Program

- Begin development of Version 5 (8266)
- Conduct Version 5 Technical and Customer Tests (750)
- Prepare and conduct Version 5 PDR and CDR (1500)
- Prepare and conduct Version 5 PEO IPR (973)

frequency agile solid state power amplifier and antenna coupler (FSHPAC) effort is an advanced development follow-on to a previously completed exploratory development effort. The Global Positioning System (GPS)-derived position location information will be integrated into ATCCS using Common Hardware/Software and Single Channel Project D246 - Tactical Communications System - Advanced Development: The project is a smart, highly efficient, agile antenna coupler and power amplifier which reasonable size, weight, and cost. The improved coupler/power amplifier will improve communicability and enable the forces to be more mobile. This phase of the countermeasures (ECCM) systems. Current barriers include availability, distortion and efficient linearity. All of the barriers must be overcome while maintaining is required for the Army's high frequency (HF) communications system. It permits the use of state-of-the-art automatic link establishment and electronic counter-Ground Airborne Radio System (SINCGARS) hardware to permit soldier/vehicle position relationships to be determined automatically.

# FY 1994 Program Accomplishments:

- Delivered for Advanced Concepts Technology Frequency Agile Solid State Tuner (ACTFAST) to US Army and Air Force (400)
  - Initiated procurement of second unit for performance testing (524)

Page 2 of 11 Pages

Exhibit R-2

Item 63

540

RDT&E BUDGET ITEM JUS	STIFICATION SHEET (R-2 Exhibit)	DATE February 1995	
BUDGET ACTIVITY	PE NUMBER AND TITLE		
4 - Demonstration And Validation	0603805A Cmbt Svc Spt Comp Sys Eval And Anal	val And Anai	
14 CONT. 15			

## FY 1995 Planned Program

- Procure Commercial off the shelf (COTS) Adaptive High Frequency (HF) Appliqué for field evaluation (300)
  - Transition ACTFAST (139)
- SBIR/STTR (9)

## FY 1996 Planned Program

- Develop Conformal Antenna (800)
- Evaluate COTS future data radio and non-development item (NDI/COTS) multi-band, multi-mode radio (765)

# FY 1997 Planned Program

- Fabricate Advanced Development Models of Conformal Antennas Very High Frequency (VHF) & possibly HF (1490)
  - Develop higher data rate communication (602)

Project D2GT - CSSCS Operational Test, provides funding for the analysis of the PM CSSCS IOT&E :est results during the first two quarters of FY 95. The final test report is required for the scheduled CSSCS ASARC III in April 95.

# FY 1995 Planned Program

- Analyze CSSCS IOT&E test Results/Publish Report (89)
- SBIR/STTR (2)

B. Program Change Summary  Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SBIR/STTR(-360) b. Reprogramming from PE (-2233) Current President's Budget	EY 1994 24.118 -2593 21525	EY 1995 18876 18635 18635	FY 1996 14017	EY 1997 13620 13581
--	-------------------------------------	------------------------------------	------------------	---------------------------

Page 3 of 11 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATION	SHS NC	ET (R-2	Exhibit			DATE	February 1008	Y O
BUDGET ACTIVITY			PE NU	PE NUMBER AND TITLE	THE					PROJECT
4 - Demonstration And Validation			200	Deussuad C	MDt SVC	Cmbt Svc Spt Comp Sys	IP Sys El	Eval And Anal		D091
COST (in Thousends)	FY 1984 Actual	FY 1965 Estimate	FY 1986 Estimate	FY 1907 Estimate	FY 1996 Eathmate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complets	Total Cost
D091 Combat Service Support Control System	20801	19086	12404	11480	<b>25</b>	6157	0	0	0	136539
C. Other Program Funding Summary									i	E
Procurement, OPA 2 (W34600) Spares (MA9706/BS9706)	EY 1994 0	EY 1995 5977 1402	EY 1996 5915 1360	EY 1997 6046 931	EY 1998 6095 317	EY 1999 6142 203	EY 2000 14914 199	EY 2001 14916 199	Compl 64886 1415	Cost 124918 6026
D. Schedule Profile										
	FY 1994	4	F ~	FY 1995	7	FY 19%	<b>*</b>	-	FY 1997	•
IOT&E	•		-	1	•	4	,	-	7	r
ASARC III			×							
C31 Committee Review			×							
FUE V3			×							
10C V3					×					
V4 PDR					×					
4 CDR					×		>			
V4 II										
V4 PEO IPR							< >			
V5 PDR							<b>;</b>	×		*
V5 CDR									×	
VSTT									×	
VS FOT&E										××
										<
			Puge 4 of 11 Pages	Pages				Exhibit R-2	~	
				22.5						];
			***							



Project Notive   Project Notive   Project Notive   Project   Pro	RD	RDTSE PROGRAM ELEMENT/P	RAM ELE	MENT/PRC	ROJECT C	OST BE	EAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
EV 1994   EV 1995   EV 1995   EV 1995   EV 1995   EV 1995   EV 1997   EV 1998   EV 1997   EV 1998   EV 1	BUDGET ACTIVITY 4 - Demonstra	ation And Va	lidation			PE NUMBER 0603805	AND TITLE	Svc Spt C	omp Sys I	Eval And	į	20JECT <b>091</b>
Page 5 of 11 Pag	A. Project Cost B Software Developm Program Manageme CASS/CHS/Commo	urakdown ent ent Support en Support d Evaluation			FY 1994 11109 2634 3113 3745	FY	1 <u>995</u> 1000 1003 1193	FY 1996 8300 1881 1092 1131	FY 1997 7720 1803 1216 750			
Ing Organization History and Planning Information   Project   Total	Total •SBIR/STTR (361)				20601	•	9608	12404	11489			
Ing Organizations	B. Budget Acquis	ition History and	d Planning Inf	ormation								
Development Organizations         Development Organizations         15731         15731         15731         15731         15731         15731         0	Performing Organ Contractor or Government Performing Activity	nizations Contract Method/Type or Funding	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to	Total
C/CPAF   2/91   57990   58000   32823   11109   9500   4500   0   0   570	Product Developm	nent Organizatio	ns 7/87	15731	15731	15731	0	0	0	0	0	15731
om Spt MIPR and Management Organizations  S	TRW Martin Marietta	C/CPAF	2/91	57990 TBD	58000	32823	11109	9500	4500	0	0868	57932 22000
Sample   S	CASS/Com Spr	MIPR				389	1156	2000	342	999	903	5456
RO   MIPR   S40   166   204   94   115   86   150   MIPR   1225   376   463   212   262   196   215   262   196   215   262   196   215   262   196   215   262   196   215   262   196   215   262   196   215	PM CSSCS	agement Organi	Zations			9804	2092	2336	1575	1426	1888	19121
AC MIPR 262 1677 1118 1061 695 0 4  AC MIPR 2000 25000 25000 2000 Exhibit R-3	CECOM EER/VITRO	MIPR MIPR				540 1225	166 376	204 463	94 212	115 262	% 196	120°5 2734
AC MIPR 2000 75 70 55 2000  2 Page 5 of 11 Pages Exhibit R-3	Test and Evaluati	ion Organization MIPR	₩2			262	1677	1118	1901	695	0	4813
Exhibit R-3	EPG/CAC OPTEC	MIPR				170	68 2000	75	70	55		438
Exhibit R-3											9	
					Раѕе	Sofil Page	2.5			Exhibit F	<del>[3</del> 3	

543

RDT&E PROGRAM ELEMENT/P	AM ELI	EM	ENT/PROJECT	ROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	lation			PE NUMBER AND TITLE 0603805A Cmb	SAND TITLE	TITLE Cmbt Svc Spt Comp Sys Eval And Anal	omp Sys	Eval And	Anal	
<u> </u>	Award or Obligation <u>Date</u>		Delivery <u>Date</u>	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property CHS - TRW MIPR Support and Management Property: None Test and Evaluation Property CHS. I Cay & 2 AD MIPR	None			1444	757	000	750	550	300	4701
₹ ₹ 3				Total Prior to 50387 11569 1640 63596	EX 1994 13022 2634 4945 20601	EX 1995 13900 3003 1193 *180%	EY 1996 9392 1881 1131 12404	EY 1997 8936 1803 750 11489	Budget to Complete 10183 2170 0 12353	Total Program 105820 23060 9659 138539
			Pas	Pare 6 of 11 Pares	S			Exhibit R-3	<u>I</u>	
										Item 63

RDT&E BUDGET ITEM JUSTIFICATION SHEET	EM JUST	FICATI	ON SHE	ET (R-2	(R-2 Exhibit)	<b>∵</b>		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 060	PE NUMBER AND TITLE 0603805A Cmb	OTITIE Comp Sys Eval And Anal	Spt Con	np Sys E	val And		PROJECT <b>D246</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D246 Tactical Communications System-Advanced Development	924	874	<del>2</del> 8	2082	1948	1884	0	0	Continuing	Continuing
C. Other Program Funding Summary Not Ap	Not Applicable									
D. Schedule Profile	FV 1994		į	1004		<u> </u>	¥		200	
A TOTAL A CONTRACT A C	2 3	₩.	1 2	2 3	4 1	2 3	5 K		FI 1997 2 3	4
AEL ACTFAST Award AEL ACTFAST Test Simulator Award ADHF Award ADHF Test Phase I Conformal Antenna Award (VHF) COTS/NDI MBMR Award Phase I Conformal Antenna Test COTS/NDI MBMR Test FDR/NDI Award Phase II Conformal Antenna Award FDR/NDI Test FDR/NDI Test	*	* * *	*		××		××	×	×	××
			Page 7 of 11 Pages	l Pages				Exhibit R-2	ç	

RD	RDT&E PROGRAM ELEMENT	RAM ELE		ROJECT COST BREAKDOWN (R-3)	SOST BI	REAKDO	WN (R-3		DATE	February 1006	900
BUDGET ACTIVITY 4 - Demonstration And Validation	tion And Val	lidation			PE NIMBER AND TITLE 0603805A Cmb	SAND TITLE	Svc Spt C	Svc Spt Comp Sys Eval And Anal	Eval And		PROJECT D246
A. Project Cost Breakdown	cakdown			FY 1994		FY 1995	FY 1996	FY 1997			
Development Support Equipment Acquisition	Development ort Equipment Ac	quisition		331		90 3		006			
Government Engineering Support	zering Support			785 281		23	/8/ 173	386			
Travel				23		<b></b>	\$	55			
Miscellaneous				0		13	<u>%</u>	155			
Technical Data Developmental Test & Evaluation	& Evaluation					5 5 5	315	131			
Operational Test & Evaluation	Evaluation					3	C.	100			
Program Management Support Contract Engineering Support	ent Support 18 Support					88 98 89					
Total				924		•448	1565	2002			
*SBIR/STTR (9)											
B. Budzet Acquisition History and Planning Information	tion History and	Planning Inf	ormation								
Performing Organizations	izations										
Contractor or	Contract	,	•								
Performing	Method/1ype	Award or	Performing	Project	Total					:	i
Activity	Vehicle	Date	EAC	Cuice	FY 1994	FY 1994	FV 1995	FV 1996	FV 1997	Complete	I otal Program
Product Development Organizations	ent Organization	1 SE								Aladina	105101
AEL	Task Order	Y'X	YX X	<b>Y</b> X	0	009	0	0	0	Cont	Cont
Adaptive HF	Task Order	Y Y	<b>V</b> N	<b>V</b>	0	0	95	0	0	Cont	Cont
Conformal Ant	Task Order	ΝΑ	Y V	Ϋ́	0	0	0	343	0	Cont	Cont
COTS.NDI MBMR		Y Y	YZ Z	<b>V</b>	0	0	0	344	0	Cont	Cont
FDR NDI	Base Ops	٧Z	¥ X	Y'A	0	0	0	0	006	Cont	Cont
Conformal Ant-HF	Task Order	¥ Z	Y Y	NA V	0	0	0	0	386	Cont	Cont
				Page	Page 8 of 11 Pages	Sa			Exhibit R-3	<b>5</b>	

546 UNCLASSIFIED

Item 63

RD	RDT&E PROGRAM ELEMENT/P	RAM ELE	MENT/PR	OJECT (	COST BF	REAKDO	ROJECT COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstr	BUDGET ACTIVITY 4 - Demonstration And Validation	lidation			PE NUMBER AND TITLE 0603805A Cmb	SA Cmbt	TITLE Cmbt Svc Spt Comp Sys Eval And Anal	omp Sys	Eval And	Anal	
Contractor or Government Performing	Contract Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity Support and Man	Activity Vehicle Date Support and Management Organizations	<u>Date</u> zations	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Lincoln Labs	MIPR	<b>4 4 2 2</b>	<b>4 4 7 7</b>	Y Z	<b>4 4 2 2</b>	324	100	0 878	0 9	Cont	Cont
Test and Evaluat	Test and Evaluation Organizations: None	s: None		•				}	3		<u> </u>
Government Fun	Government Furnished Property Not Applicable	Not Applicable	e.		Total						
	•				Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Subtotal Support and Management	Development and Management					324	95 353	878	1286 806	Cont	S S
Subtotal Test and Evaluation	Evaluation					č	•	•	6	(	(
ORBIR/STTR (9)						924	*448	1565	2092	Cont	Cont
											······································
				Page	Page 9 of 11 Pages	Si			Exhibit R-3	\-3	
											,

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-	2 Exhibi	<b>3</b>		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 060	PE NUMBER AND TITLE 0603805A Cmb	STITLE Cmbt Svc Spt Comp Sys Eval And Anal	Spt Con	ip Sys E	/al And /		PROJECT D2GT
COST (in Thousands)	FY 1994 Actual	تې 1995 Estimate	FY 1996 Estimate	FY 1997 Eethmate	FY 1998 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to	Total Cost
D2GT CSSCS Operational Test	0	8	0	0	0	0	0	0	0	18
C. Other Program Funding Summary Not Applicable	icable									
D. Scheduk Profile	FY 1994		ĮI.	FY 1995		FV 1996	×		FV 1997	
1 Perform Analysis - PM CSSCS IOT&E Data	. C	4	× - ×	m	4	7	<b>4</b>	-	2 3	4
			Page 10 of 11 Pages	11 Pages				Exhibit R-2	2	
			548							Item 63
			UNCLASSIFIED	SIFIED						

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	NT/PROJ	ECT CO	ST BR	EAKDO	WN (R-3		DATE F	February 1995	1995
BUDGET ACTIVITY 4 - Demonstration And Validation		<b>a.</b>	PE NUMBER AND TITLE 0603805A Cmb	ND TITLE	Svc Spt C	PENUMBER AND TITLE 0603805A Cmbt Svc Spt Comp Sys Eval And Anal	Eval And		PROJECT D2GT
A. Project Cost Breakdown Analysis of PM CSSCS IOT&E Test Data		FY 1994 0	FY 1995 91	99 <u>5</u> 91	FY 1996 0	FY 1997 0			
B. Budget Acquisition History and Planning Information	ion								
Performing Organizations  Contractor or Contract  Government Method/Type Award or Performing or Funding Obligation Activity  Activity Vehicle Date  Product Development Organizations None Support and Management Organizations None	Performing Pr Activity C EAC	Project Office EAC E	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations OPTEC NA. NA.	0	0	0	0	91	0	0	0	91
Government Furnished Property: Name									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project					91				91
		Page 11	Page II of II Pages	S			Exhibit R-3	۲-3	

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	TION SH	IEET (R	-2 Exhib	it)		DATE <b>Fe</b> l	February 1995	95
8ubg	BUDGET ACTIVITY 4 - Demonstration And Validation			PE N. 060 De	PE NUMBER AND TITLE 0603806A NBC Development	TITLE NBC Defense Systems - Advance of	anse Sys	tems - A	dvance		
	COST (in Thousands)	FY 1904 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1967 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
	Total Program Element (PE) Cost	36131	15072	0	0	0	0	0	0	Continuing	Continuing
DEBO	DE80 NBC Individual Protection	9099	0	0	0	0	0	0	0	Continuing	Continuing
DE81	DE81 NBC Decontamination Systems	3000	4969	0	0	0	0	0	0	Continuing	Continuing
D801	D601 NBC Contamination Avoidance Systems	21277	8623	0	0	0	0	0	0	Continuing	Continuing
980	D604 NBC Protection Systems	6169	1480	0	0	0	0	0	0	Continuing	Continuing

A. Mission Description and Budget Item Justification: The NBC weapons threat to U.S. Forces has shifted from a bi-polar confrontation with the former Soviet Union collective protection systems; decontamination solutions and equipment, and addresses various shortcomings identified in Conduct of the Persian Gulf War; Final Report weapons use. Projects support development and demonstration testing of radiological and chemical/biological/toxin agent detection and warning systems; individual and to contingencies involving Third World Nations. The House Armed Services Committee Report Countering the Chemical and Biological Weapons Threat in the Post-Soviet World, dated January 1993, concluded that effective NBC defense measures, to include detection and protective equipment, provide a deterrent to enemy CB to Congress, April 1992. This program element focuses on efforts associated with advanced technology development used to demonstrate general military utility to include demonstration and validation in the area of chemical/biological defense equipment advance development and is correctly placed in Budget Activity 4.

This program was transferred to a Defense Program Element (PE 0604384BP) starting in FY 96 pursuant to Congressional direction in Public Law 103-160, Title XVII.

M43 Type II and M43A1 Type II aviators mask and will eliminate air crew dependency on forced air while providing compatibility with aircraft and night vision systems. DE80 NBC Individual Protection: Provides for Demonstration/Validation (DEMVAL) for the XM45 Aircrew Protective Mask (ACPM). The ACPM will replace the

## FY 1994 Accomplishments:

- ACPM Conducted Milestone II In Process Review (IPR) (100)
- ACPM Designed and Fabricated of test articles (4429)
  - ACPM Technical Data Package Prepared (1007)

## FY 1995 Planned Program:

No Planned Program

Page 1 of 14 Pages

Exhibit R-2

550

UNCLASSIFIED

Item 64

RDT&E BUDGET ITEM JUS	TIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603806A NBC Defense Systems - Advance	dvance
	Development	

## FY 1996 Planned Program:

Program transferred to PE 0603884BP/DE80.

## FY 1997 Planned Program:

Program transferred to PE 0603884BP/DE80.

decontamination system. The MDS reduces water usage and equipment processing time with increased water pressure and variable water temperature. The MDS consists of the XM21 Decontaminate Pumper Module and the XM22 High Pressure Washer Module. A Milestone I/II Decision was approved in Dec 93. Funding also supports the therefore, the hazard associated with the spent decontaminate will be reduced. The Sorbent will be more compatible with Mission Oriented Protective Posture (MOPP) and DE81 NBC Decontamination System: Funding supports the Modular Decontaminating System (MDS), a more transportable, less labor intensive, and more effective system for applying decontaminating solutions to vehicle and equipment surfaces. Lessons learned from Desert Storm validated the need for a deployable and efficient Decontaminating Solution 2 (DS-2) in operator spraydown procedures. The Sorbent will be more reactive towards Chemical Warfare (CW) agents than the M295 Kit, Sorbent Technology program which provides a reactive Sorbent for immediate decontamination. It will replace the M295 Kit, for personal wipedown procedures and other materials that currently use DS2.

## FY 1994 Accomplishments:

- MDS Conducted MS I/II IPR (40)
- MDS Completed early Engineering Design Test on XM21 (947)
- MDS Initiated Engineering Design Tests (1160)
- MDS Awarded Integrated Logistics Support (ILS) Contract for XM22 (853)

## FY 1995 Planned Program:

- MDS Complete Engineering Tests (1691)
- MDS Fabricate Test Hardware (1274)
- MDS Conduct Pre-Production Qualification Test (PPQT) (900)
  - MDS Conduct Critical Design Review (1000)
- SBIR/STTR (104)

## FY 1996 Planned Program:

Program transferred to PE 0603884BP/DE81.

Page 2 of 14 Pages

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1995 DATE

BUDGET ACTIVITY

4 - Demonstration And Validation

0603806A NBC Defense Systems - Advance PE NUMBER AND TITLE **Development** 

## FY 1997 Planned Program:

Program transferred to PE 0603884BP/DE81.

mapping for chemical agent clouds; (2) Chemical Biological Mass Spectrometer (CBMS) which identifies all chemical and biological agents collected and is a component point detector for threat biological agents which is also a component of the BIDS and is under management of the Joint Program Office for Biological Defense (IPO-BIO). of the Nuclear, Biological and Chemical Reconnaissance System (NBCRS) and the Biological Integrated Detection System (BIDS); and (3) Biological Detector (BID), a equipment. Items of equipment included in this project are: (1) Lightweight Standoff Chemical Agent Detector (LSCAD) which provides chemical agent detection and D601 NBC Contamination Avoidance Systems: This project provides Demonstration Validation (DEMVAL) of Reconnaissance, Detection, and Identification (RDI) All of these systems increase existing chemical and biological war fighting capabilities by providing more complete, accurate, and current battlefield data.

## FY 1994 Accomplishments:

- CBMS Initiated Bioprofiling (2000)
- CBMS Initiated Design Modifications (Software, Aerosol Sampler Interface) (4000)
- CBMS Fabricated Prototype Hardware (2487)
- Marine Corps-Transferred Funding to meet Congressional Intent (5959)
- JPO-BIO Completed feasibility test and evaluation for Biological Detector (6831)

## FY 1995 Planned Program:

- CBMS Complete Bioprofiling (300)
- CBMS Initiate Chemical Profiling (500)
- CBMS/BIDS Complete Design Modifications (3882)
  - CBMS Conduct Engineering Test (1200)
- CBMS Fabricate Technical Feasibility Test/Limited User Test (TFT/LUT) Hardware (2560)
- SBIR/STTR (181)

## FY 1996 Planned Program:

Program transferred to PE 0603884BP/D601.

## FY 1997 Planned Program:

Program transferred to PE 0603884BP/D601.

Page 3 of 14 Pages

Item 64

RDT&E BUDGET ITEM JUSTIFICATION 8	JSTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603806A NBC Defense Systems - Advance	vance
	Development	

filter change logistics burden. The AICPS can be integrated into multiple configurations to provide protection to different tactical systems. Additionally, the effort provides D604 NBC Protection Systems: The project provides for development of the Advanced Integrated Collective Protective System (AICPS). The AICPS will integrate NBC oxidation or deep bed chromium-free carbon). The effort extends vehicular collective protection applications providing for reductions in system size, weight, energy and in filtration environmental controls and power source components for tactical and combat systems and exploit new filtration technology (regenerable filtration, catalytic a system solution for countering future threat agents and alleviating the disposal problems associated with hazardous material chromium impregnated carbon filters.

## FY 1994 Accomplishments:

- AICPS Awarded Development Contract for improved collective protective systems for multi-tactical systems (3775)
- AICPS Developed Design Concepts for integration (1546)
- AICPS Conducted User Interface and System Integration evaluation for different platforms (997)

## FY 1995 Planned Program:

- AICPS Conduct prototype filter testing (140)
- AICPS Initiate Engineer Design Filter Test (140)
  - AICPS Continue Engineering Support (1169)
    - SBIR/STTR (31)

## FY 1997 Planned Program:

Program transferred to PE 0603884BP/D604.

## FY 1997 Planned Program:

Program transferred to PE 0603884BP/D604

## B. Program Change Summary:

FY 1995

FY 1994

Previous President's Budget	40903	13778	
Appropriated Value	40903	15072	
Adjustments to Appropriated Value	4772		
a. SBIR/STTR decrement	(633)		
b. Reprogrammed out of PE	(4139)		
Current Budget Submit/President's Budget	36131	15072	

553

Page 4 of 14 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	2 Exhibi	æ		DATE	Fahrian 100K	900
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NE Dev	PE NUMBER AND TITLE 0603806A NBC Development	TITLE NBC Defense Systems - Advance int	ense Sys	tems - Ad	dvance		PROJECT DE80
COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to	Total Cost
DE80 NBC Individual Protection	\$636	0	0	0	0	0	0	0	_	Continuing
C. Other Program Funding Summary: RDTE, A Budget Activity 5 PE 0604806 Project D017 NBC Protection Systems	FY 1994 170	FY 1995 9050	To Compl Cont'd	Total Cost Cont'd					}	
D. Schedule Profile;  ACPM - Design and Fabrication  ACPM - TDP Preparation  ACPM - Milestone II IPR	FY 1994 2 3 X*	<b>→</b> *	E. 4	FY 1995 2 3	₩		,			
		•	Page 5 of 14 Pages	Pages				7 ir ir ir ir ir ir ir ir ir ir ir ir ir		

554

Item 64

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DATE	February 1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603806A NBC Defense Systems - Advance Development	PROJECT <b>DE80</b>
A. Project Cost Breakdown:		
FY 1994 Government Engineering Summer 1905	FY 1995	
7		
port		
Quality Assurance 150		
ai Data		
Testing 100		
nentation		
Total 5536	0	
B. Budget Acquisition History and Planning Information: Not Applicable.		
Page	Page 6 of 14 Pages	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit	1 3		DATE	February 1008	908
BUDGET ACTIVITY			PEN	PE NUMBER AND TITLE	TITLE				A Included	PROJECT
4 - Demonstration And Validation			060 Dev	0603806A Ni Development	NBC Defense Systems - Advance	ense Sys	tems - A	dvance	u	DE81
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE81 NBC Decontamination Systems	3000	4963	0	0	0	0	0	0	Continuing	Continuing
C. Other Program Funding Summary: Not Applicable.	olicable.									
D. <u>Schedule Profile</u> :										
-	FY 1994 2 3	4	1 2	FY 1995 2 3	4					
MDS Conduct Milestone I/II X*	*^									
MDS Award XM22 Contract	<b>'</b>	×								
MDS Start EDT		×		;						
MDS Start PPQT				×	×					
			Page 7 of 14 Pages	Pages				Exhibit R-2	2	
			556							Item 64
		=	INCI ASSIEIEN	ונונוט						
		,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	= T						

RDT&E PROGRAM ELEMENT	PROJECT CC	/PROJECT COST BREAKDOWN (R-3)	DATE February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation		PE NUMBER AND TITLE 0603806A NBC Defense Systems - Advance Development		PROJECT <b>DE81</b>
A. Project Cost Breakdown;				
	FY 1994	FY 1995		
MDS Development Engineering	1293	1403		
MDS Producability Engineering	308	353		
MDS Prototype Manufacturing	370	243		
MDS Systems Test & Evaluation	314	1298		
MDS Training	25	41		
MDS Technical Data Package	069	527		
MDS Critical Design Review		1000		
SBIR/STTR		104		
Total	3000	4969		
B. Budget Acquisition History and Planning Information:	Not Applicable			

Page 8 of 14 Pages

Exhibit R-3

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE	Eshaisay 100K	
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Dev	PE NUMBER AND TITLE 0603806A NBC Development	TITLE NBC Defense Systems - Advance	ense Sys	tems - A	dvance		PROJECT D601
COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to	Total Cost
D601 NBC Contamination Avoidance Systems	21277	8623	0	0	0	0	0	0	Continuing	Continuing
C. Other Program Funding Summary										
RDTE, A Budget Activity 2, PE 0602622A, Project A553 CB Defense & General Investigation	FY 1994 35529	FY 1995 29614	To Cont'd	Total Cost 'd						
ADTE, A Budget Activity 5 PE 0604806A, Project D020 NBC Contamination Avoidance	42285	9469	Cont'd	Cont'd						
RDTE, D Budget Activity 7, PE 06073724D, Joint Eiological Defense Program		52895		52895						
Other Procurement, Army, OPA-3 M93000, BIDS		14583		14583						
D. Schedule Profile	ļ		1							
CBMS Award Contract CBMS Bioprofiling CBMS Engineering Design Test	FY 1994	*	i.	FY 1995	×					
CBMS Fabrication for TFT/LUT  Bio Detector (BD) Feasibility Test	*	•			×					
			Page 9 of 14 Pages	Pages				Exhibit R-2	01	
			333							

Item 64

بہ

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ROGRAM	ELEN	MENT/PR	SJECT C	SOST BI	REAKDO	WN (R-3	(1)	DATE February 1995	v 1995
BUDGET ACTIVITY 4 - Demonstration And Validation	d Validatio	c			PE NUMBER AND TIT 0603806A NI Development		Defense 5	TITLE NBC Defense Systems - Advance nt	Advance	PROJECT D601
A. Project Cost Breakdown:	, a al									
	1			FY 1994		FY 1995				
CBMS Design				4000		3882				
CE:MS Fabrication				2487		1060				
CEMS Test (including Bioprofiling)	filing)			2000		2000				
CB MS Documentation	ı					1500				
BD Engineering Design				7696						
BD Technical Data/Documentation	ation			2265						
BD Fabrication				1725						
BD Test and Evaluation				145						
Marine Corps (MC)				8989						
SBIR/STTR										
Total				77212		8623				
B. Budget Acquisition History and Planning Information:	ry and Plannir	ng Infor	mation:		·					
Perferming Organizations										
Confractor or Contract	•									
	8.		Performing	Project	Total					
Performing or Funding	ing Obligation		<b>Activity</b>	Office	Prior to			Budget to	Total	
Activity Vehicle	Date		EAC	EAC	FY 1994	FY 1994	FY 1995	Complete	Program	
t Development	rations									
k			7800	7800		2600	4901	299	7800	
		-	0081	0081		1800			1800	
SIC	Apr 94		145	145		145			145	
Others	NOV 93	_				1534			1534	
Support and Management Organizations	ganizations									
Govt CBDCOM	Oct 93		10172	10172		7318	1741	1113	10172	
Marine Corps MIPR	Mar 94	-				5959			5959	
Test and Evaluation Organizations	tions									
TECOM MIPR	Jan 94		2300	2300		200	1800		2300	
WSMR MIPR	Oct 93		78	78		78			78	
				Page	Page 10 of 14 Pages	zes			Exhibit R-3	
					033					Item 64
					939					

Ž.	DT&E BUC	GET ITE	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION	SHEET	(R-2 Exh	libit)		DATE	Eahnish, 100£
BUDGET ACTIVITY					PE NUMBER AND TITLE	AND TITLE				PROJECT
4 - Demonstration And Validation	tion And Va	lidation			0603806A NI Development	<b>a</b>	Defense (	NBC Defense Systems - Advance nt	Advance	D601
Contractor or Government Performing Activity DPG Dahlgren MICOM USACMLS	Contra 1 Methou/Type or Funding Vehicle MIPR MIPR MIPR MIPR	Award or Obligation Date Mar 94 Jan 94 Feb 94	Performing Activity EAC 390 50 745	Project Office EAC 390 50 745	Total Prior to EY 1994	EY 1994 390 50 745 40	EY 1995	Budget to Complete	Total Program 390 50 745	
ARL MIPR Oct Government Furnished Property: None.	MIPR Mipre	Oct 93	01 78 7	0 <b>1</b> 82		0 <del>4</del> 78 87			04 8 7	
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	velopment I Management alustion				Total Prior to FY 1994	FY 1994 6079 13277 1921 21277	FY 1995 4901 1741 1800 8442*	Budget to  Complete 299 1113 0	Total Program 11279 16131 3721	
*Does not ir clude SBIR/STTR (181)	3IR/STTR (181)			Page	Page 11 of 14 Pages	•			14 24 0	
					-					100

Item 64

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI(	N SHE	ET (R-2	Exhibit			DATE Fet	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Dev	PE NUMBER AND TITLE 0603806A NBC Development	TITLE NBC Defe It	anse Sys	TITLE NBC Defense Systems - Advance int	dvance	ā 🔾	РRОЈЕСТ <b>D604</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D604 NBC Protection Systems	6318	1480	0	0	0	0	0	0	Continuing	Continuing
C. Other Program Funding Summary:			Ę							
RDTE, A Budget Activity 5 PE 0604806A Project D017 NBC Protection Systems	FY 1994	FY 1995	To Cont'd	Total Cost Cost						
D. Schedule Profile:										
	FY 1994	4	T 2	FY 1995 2 3	4					
AICPS Awarded Development Contract AICPS Developed Design Concept AICPS Initiate Prototype Fabrication	×	* *	×							
AICPS Prototype Filter Testing AICPS Test Engineering Design Filter				×	×					
Test AICPS Engineering Support AICPS Initiate Engineering Design Test (EDT)					××					
	:		Page 12 of 14 Pages	4 Pages				Exhibit R-2	?	
										17

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3		DATE	3007
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603806A NBC Development	A NBC I	Defense 5	TITLE NBC Defense Systems - Advance	Advance D60	PROJECT D604
A. Project Cost Breakdown;						
Hardware Development 1546 Producability 300	FY 1995	<b>3</b> 32				
3		1169				
	0.0					
Reliability, Maintainability, and Availability Configuration Management Technical Data	2.5					
EDT		280				
SBIR/STTR Total 6318		31 1480				
B. Budget Acquisition History and Planning Information:						
Performing Organizations						
ומ						
Covernment Method/Type Award or Performing Project Performing or Funding Obligation Activity Office	Total Prior to			Distract	F	
Date EAC	FY 1994	FY 1994	FY 1995	Complete	rogan Program	
Product Development Organizations  Loral Librascope C/CPFF Inn 94 3775 3775		3775		i		
anagement Organizations		0110			3//5	
Govi CBDCOM PO Oct 94 3992 3992		2543	1449		3992	
Government Furnished Property: None.						
Page	Page 13 of 14 Pages				Exhibit R-3	
	\$67					Item 64

Item 64

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (	R-2 Exh	ibit)		DATE February 1995	1995
BUDGET ACTIVITY 4 - Demonstration And Validation	PE NUMBER AND TITLE 0603806A NBC	AND TITLE A NBC [	efense S	E NUMBER AND TITLE 0603806A NBC Defense Systems - Advance	Advance	PROJECT <b>D604</b>
	Development	ment				
	Total					
	Prior to			Budget to	Total	
	FY 1994	FY 1994	FY 1995	Complete	Program	
Subtotal Product Development		3775	0	0	3775	
Subtotal Support and Management		2543	1449	0	3992	
Subtotal Test and Evaluation		0	<del>O</del>	0	0	
Total Project		6318	1449*	0	1911	

\*Does not include SBIR/STTR (31)

Exhibit R-2

	RDT&E BUDGET ITEM JU	EM JUS	TIFICAT	HS NO!	EET (R	STIFICATION SHEET (R-2 Exhibit)	oit)		DATE <b>Fel</b>	February 1995	195
8ubg <b>4 - [</b>	BUDGET ACTIVITY 4 - Demonstration And Validation			76 N 060 Dev	PENUMBER AND TITLE 0603807A Medi Development	ritle Medical S t	ve number and Title 0603807A Medical Systems Advanced Development	Advanced			
	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	21480	16439	10576	10571	9778	897.6	9824	9810	Continuing	Continuing
908G	DoD Drug and Vaccine-Advanced Development	7745	7254	3963	3970	3918	3887	3864	3858	Continuing	Continuing
080	Medical Biodefense Drug/Vaccine	\$525	0	0	0	0	0	0	0	0	5525
D811	Military HIV Vaccine and Drug-Advanced Development	1836	191	2671	2729	2011	1516	2114	2111	Continuing	Continuing
D836	D836 Combat Medical Materiel-Advanced Development	028	2923	2734	3008	2882	2976	2863	2959	Continuing	Continuing
0837	D837 Soldler System Protection-Advanced Development	0	0	1218	864	857	889	883	882	Continuing	Continuing
D983	D993 Medical Defense Against Chemical Threats	5454	6071	0	0	0	0	0	0	0	11525

\* Starting in FY 1996, funding has been consolidated into PE 0604384BP in accordance with P.L. 103-160

capability for medical defense against chemical warfare agents and infectious diseases. Starting in FY 1996, funding for chemical and biological defense medical research requirements. The PE also funds AD systems which provide measurement of or protection against physiological and psychological factors affecting cognitive and physical A. Mission Description and Budget Item Justification: This program element (PE) funds the advanced development of medical materiel necessary to field an effective medical water quality monitoring equipment. Systems include resuscitators, blood substitutes, field x-ray, and field production of medical grade oxygen. This program is initial human testing of vaccines, arthropod vector repellents, prophylactic and therapeutic drugs, rapid identification and diagnostic systems for disease/biological agents. Additionally, the PE supports AD of field medical equipment and drugs essential for combat casualty care on a high intensity battlefield while reducing logistical support performance imposed by military systems, combat operations or the environment. This includes AD of vision corrective devices, environmental health monitoring and primarily managed by the U.S. Army Medical Research and Materiel Command. This PE focuses on efforts associated with advanced technology development used to Development (AD) of systems for medical protection against naturally occurring diseases and Human Immunodeficiency Virus (HIV). This includes development and and development efforts (project D993) have been consolidated into PE 0604384BP in accordance with P.L. 103-160. Products developed will provide for maximum soldier survivability and enhanced sustainability of performance in an environment contaminated with chemical and biological threat. The PE funds Advanced demonstrate general military utility to include demonstration and validation in the area of medical materiel and is properly placed in Budget Activity 4.

Page I of 18 Pages

Exhibit R-2

Item 65

564

#### February 1995 DATE 0603807A Medical Systems Advanced RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE Development 4 - Demonstration And Validation **BUDGET ACTIVIT**

Project D808-DoD Drug and Vaccine-Advanced Development: This project funds demonstration and validation of candidate medical countermeasures such as vaccines casualties, sustain operational performance and minimize deaths and disability of armed forces during military operations. Some major contractors are The Salk Institute, Work performed in laboratories and among troop populations is directed to prevention, diagnosis and treatment of viral, bacterial and parasitic disease, so as to prevent and drugs through safety, immunogenicity, and small scale efficacy testing in volunteers against naturally occurring infectious diseases of mission aborting potential. Swiftwater, PA, University of Illinois, Chicago, IL, South Florida Research Institute, Miami, FL, and Kenya Medical Research Institute. Nairobi, Kenya.

## FY 1994 Accomplishments:

- Conducted Phase 1/2 trials of malaria blood stage vaccine. (2304)
- Conducted Phase 1 trial of recombinant hemorrhagic fever with renal syndrome (Hantaan) vaccine. (1327)
  - Conducted Phase 1 dosing studies of Rift Valley Fever live vaccine. (1131)
    - Conducted toxicity testing and field trials with candidate repellents. (1159)
- Evaluated human safety and efficacy for antimalarial drugs Halofantrine and WR238605. (1824)

## FY 1995 Planned Program:

- Conduct Phase 1/2 trials of malaria vaccine Spf66. (1023)
- Conduct Phase 1 safety trials with Rift Valley Fever live vaccine. (206)
- Evaluate human safety and efficacy of antimalarial drugs Halofantrine, WR238605, and azithromycin. (2240)
  - Complete Phase 2 trials of Shigella flexneri 2a-2 vaccine. (447)
- Conduct Phase 2 trials of recombinant hemorrhagic fever with renal syndrome (Hantaan) vaccine. (344)
- Conduct Phase 1/2 trials of Campylobacter vaccine. (663)
- Continue Phase 2 clinical study of antileischmanial drug WR 6026. (245)
  - Initiate pilot production and testing of vaccines for clinical studies. (1601)
- Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts in the prevention, diagnosis and treatment of infectious diseases. (333)
  - Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. (152)

## FY 1996 Planned Program:

- Continue safety and efficacy trials of antimalarial drugs, azithromycin, Halofantrine, WR238605 and antileischmanial drug WR6026. (2105)
  - Conduct expanded Phase 2 trials of a malaria blood stage vaccine. (1083)
    - Complete Phase 2 testing of the recombinant Hantaan vaccine. (144)
      - Complete Phase 1/2 trials of the campylobacter vaccine. (566)
- Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts in the prevention, diagnosis and treatment of infectious diseases. (55)

Page 2 of 18 Pages **2**65

Item 65

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION S	STIFICATION SHEET (R-2 Exhibit) PATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE
4 - Demonstration And Validation	0603807A Medical Systems Advanced
	Development
FY 1997 Planned Program:	

- Continue to evaluate safety and efficacy of antimalarial drugs WR238605 and halofantrine. (2177)
  - Conduct Phase 2 testing of the Group B meningococcal vaccine. (1153)
- Conduct Phase 1/2 testing of a recombinant vaccine against hemorrhagic fever renal syndrome caused by puumala virus. (480)
- Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts in the prevention, diagnosis and treatment of infectious diseases. (160)

drugs to provide an effective medical defense against validated threat agents including bacteria, viruses and other agents of biological origin. By employing biotechnology, Project D809-Medical Biological Defense Drug and Vaccine-Advanced Development: This project funds exploratory research on the development of vaccines and medical systems will be designated to rapidly identify, diagnose, prevent, and treat casualties resulting from exposure to biological threat agents.

## FY 1994 Accomplishments:

- Conducted trials of cell culture derived smallpox vaccine (2787)
- Conducted Phase I trials of Type F Botulinum toxoid (1974)
- Conducted Phase I safety trial of Botulism Immune Globulin (Human) (409)
  - Conducted non-cGMP Botulinum toxoid Type G production (355)

FY 1995 Planned Program: Program restructured to PE 0208051A, Joint Biological Defense Program

FY 1996 Planned Program: Project not funded

FY 1997 Planned Program: Project not funded

demonstration and validation of candidate vaccines and drugs through safety, immunogenicity and small scale efficacy testing and behavioral intervention in volunteers. Project D811-Military HIV Vaccine and Drug-Advanced Development: This project funds the Congressionally-mandated, militarily relevant HIV research for Efforts are directed to answer militarily unique needs affecting manning, mobilization and deployment

## FY 1994 Accomplishments:

Evaluated vaccines to protect against and treat HIV. (1836)

## FY 1995 Planned Program:

- Evaluate vaccines to protect against and treat HIV. (187)
- Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. (4)

Page 3 of 18 Pages

Item 65

#### February 1995 DATE 0603807A Medical Systems Advanced RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE **Development** 4 - Demonstration And Validation FY 1996 Planned Program: **BUDGET ACTIVIT**

· Transition a vaccine to advanced development to prevent the progression of Acquired Immune Deficiency Syndrome in individuals infected with Human Immunodeficiency Virus. (2671)

## FY 1997 Planned Program:

- · Conduct Phase 1 studies of the vaccine for the prevention of progression of Acquired Immune Deficiency syndrome in individuals infected with Human Immunodeficiency Virus. (2401)
  - Transition to advanced development a vaccine for the prevention of infection with the Human Immunodeficiency Virus. (328)

Project D836-Combat Medical Materiel-Advanced Development: The project supports advanced development of new and improved systems essential for battlefield casualty care, patient transport and evacua ion, and return to duty in support of special contingency and conventional force operations. Primary civilian contractors are University of Illinois, Chicago, IL. and Ohemda Corp., Chicago, IL.

## FY 1994 Accomplishments:

- Conducted non-clinical efficacy studies of microencapsulated antibiotic, ampicillin. (74)
- Fabricated three protetype armored ambulance medical interiors incorporating advanced commercial lifesaving equipment. (397)
  - Prepared contract for the upgrade of the Field Anesthesia Machine to meet FDA requirements. (174)
    - Evaluated concepts for development of an automated system to reconstitute frozen blood. (97)
- Modified nalitary and commercial medical equipment to facilitate patient examination and diagnosis. (178)

## FY 1995 Planned Program:

- Conclude ongoing pre-clinical studies and terminate microencapsulated antibiotic ampicillin. (215)
  - Develop an automated system to deglycerolize frozen blood. (81)
- Conduct air-worthiness certification of self-contained ventilator. (117)
- Initiate market investigation for intraosscous infusion device. (49)
- Conduct technical evaluation of the medical-dental filmless imaging system (277)
- Demonstrate and validate off the shelf technologive to develop telemedicine hardware and concepts for the treatment of combat casualties. (2123)
- Funds will be reprogrammed for SBIIVSTTR programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. (61)

## FY 1996 Planned Program:

- Evaluate silver nylon burn dressing for treatment of combat casualties. (106)
  - Complete prototype electrochemical sterilization system. (287)

Exhibit R-2

Page 4 of 18 Pages

RDT&E BUDGET ITEM JUSTIFICATION	TIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603807A Medical Systems Advanced	70
	Developmen*	
• Complete evaluation of dental filmless imaging evelom (315)		

- Complete evaluation of dental filmless imaging system. (316)
- Evaluate concepts for development of expert medical systems for trauma management. (58)
  - Initiate market investigation for far forwar! suction device. (67)
- Modify US and allied military and commercial medical equipment used for patient examination, diagnosis and treatment in the field; incorporate technological advances into field medical equipment as they come on-line. (483)
  - Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts for the treatment of combat casualties. (1417)

## FY 1997 Planned Program:

- Conduct human safety studies of a microencapsulated antibiotic (cephalosporin) and a silver nylon burn dressing for treatment of combat casualties. (737)
  - Conduct user and technical testing of a system for life support and trauma transport. (367)
    - Evaluate alternative concepts of a combat stress analysis system (285)
- Modify US and allied military and commercial medical equipment used for patient examination, diagnosis and treatment in the field; incorporate technological advances into field medical equipment as they come on-line. (928)
  - Demonstrate and validate off the shelf technologies to develop telemedicine hardware and concepts for the treatment of combat casualties. (691)

devices, pharmacologicals and other tools, to provide protection, sustainment, and enhancement of the physiological and psychological capabilities of soldiers in the face of combat operations under all environmental conditions. Focus is on reduction in the incidence of personnel losses due to preventable disease and non-battle injuries Project D837-Soldier System Protection-Advanced Development: This project supports demonstration and validation of preventive medicine materiel, including through development of environmental and physiological performance monitors and other preventive medicine countermeasures.

## FY 1994 Accomplishments: Project not funded

FY 1995 Planned Program: Project not funded

## FY 1996 Planned Program:

 Develop coupling attachments for feasibility study on M-40 protective mask blower as an improved air circulation source for chemical warfare agent protective patient wrap; develop alternative air sources using non-developmental item acquisition strategy. (1218)

## FY 1997 Planned Program:

Conduct physiological testing of candidate air circulation source for chemical warfare agent protective patient wrap. (864)

Page 5 of 18 Pages

Exhibit R-2

Item 65

RDT&E BUDGET ITEM JUSTIFICATION S	STIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
4 - Demonstration And Validation	0603807A Medical Systems Advanced	
	Development	

equipment, pretreatment and therapeutic drugs, and individual/casualty decontamination compounds. A system of medical defense against chemical agents is required to provide individual soldiers protection, to sustain their performance in a chemical environment, and to provide for self-aid and medical treatment of chemical casualties. Project D993-Medical Defense Against Chemical Threats: This project funds advanced development of countermeasures for chemical agents including life support Major contractors include Battelle Memorial Institute, Columbus, OH, SRI International, Menlo Park, CA, and University of Illinois, Chicago, IL.

## FY 1994 Accomplishments:

- Completed pre-clinical studies of the nerve agent antidote system, HI-6. (2413)
  - Conducted testing for the prototype multichambered autoinjector. (1248)
    - Conducted human safety studies of the topical skin protectant. (1221)
- Evaluated commercial products for use within the chemical protective patient wrap for improved air circulation. (572)

## FY 1995 Planned Program:

- Conduct human safety studies of the nerve agent antidote, HI-6. (1970)
  - Conduct human safety studies of topical skin protectant. (1658)
- Conduct technical testing of the multichambered autoinjector. (1183)
- Test commercial products for use in the chemical protective patient wrap. (1193)
- Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research Program Reauthorization Act of 1992. (67)

## FY 1996 Planned Program: Project moved to DoD PE 0604384BP.

## FY 1997 Planned Program: Project moved to DoD PE 0604384BP.

FY 1995 FY 1996	21628 17495 15614 15582	21628 16439	-148			21480 16439 10576 10571
B. Program Change Summary	Previous President's Budget	Appropriated Value	Adjustments to Appropriated Value	a. SBIR/STTR (-310)	b. Reprogramming total (162)	Current President's Budget Submit

Changes to FY 1996/FY 1997: Funding for chemical and biological defense efforts (project D993) has been consolidated into PE 0604384BP in accordance with P.L. 103-160.

67.

Page 6 of 18 Pages

Exhibit R-2

Item 65

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	<b>IFICATI</b>	ON SHE	ET (R-	Exhibit	<u>_</u>		DATE FeI	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation			PE N.	PENUMBERAND TITLE 0603807A Medi	PENUMBER AND TITLE  0603807A Medical Systems Advanced Development	ystems /	Advanced			PROJECT D808
COST (in Thousands)	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Coet to	Total Coet
D808 DoD Drug and Vaccine-Advanced Development	7745	1.		3970		3887	3864		Continuing	Continuino
C. Other Program Funding Summary: Not Applicable	pplicable									
			•		,	,				
D. <u>Schedule Profile</u> : Multiple medical developmental products will advance through various events throughout the FY. FY 1995	ental products FY 1994	is will advan t	oe through v F	various event FY 1995	ts throughou	t the FY. FY 1996	8		FY 1997	
	7	3 4	1 2	E	4	7	3 4		2 3	4
Malaria Spf66 MLST 2					×					
Campylobacter MLST 1			×					;		
MLS I 2 IPR								×		
Poumala MLST 1 IPR Hantaan MI ST 2 IPR						×				
Rift Valley MI ST1	<b>&gt;</b>					<				
MLST 2	<					×				
Shigella Flemeri 2a-2 MLST 2			×			:				
Shigella sonnei MLST 1			×							
Antimalarial Drug WR238605 MLST 2							×			
Antimalarial Drug WR6026 MLST 2						×				
Antimalarial Drug Azthromycin MLST	×				×					
0/1, MLS1 2	•	>							;	
MLST 2		ć							<b>×</b>	
			Page 7 of 18 Pages	8 Pages				Exhibit R-2	.2	
			0.13							Item 65

570

Item 65

RDT&	RDT&E PROGRAM ELEMENT	SAM ELE		PROJECT C	OST BR	EAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	on And Vali	dation			PE NUMBER AND TITLE 0603807A Med Development	AND TITLE A Medica	al System:	אוזונב Medical Systems Advanced ent		g O	РRОЈЕСТ <b>D808</b>
A. Project Cost Brest down Test & Evaluation Product Development Project Management Total	<sup>1</sup> down			FY 1994 5644 1788 623 8055	FY 1995 4633 2634 611 7878	199 <u>5</u> 4633 2634 611	FY 1996 3212 232 529 3973	FY 1997 2970 653 367 3990			
B. Budget Acquisition History and Planning Information	on History and	Planning Info	rmation								
Performing Organizations Contractor or Contractor or	ations Contract		Deef	Droice	F G						
Covernment Performing Activity	Method 1 ype or Funding Vehicle	Award of Obligation Date	Activity EAC	Office EAC	Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations	organization	\$1 V.V	7	Y Z	7	630	111	C	C	Cont	Cont
Contracts Salk Institute	CPFF	APR 1988	505 50556	50556	42176	1149	2301	232	623	Cont	Cont
Support and Management Organizations	ement Organiz	ations					,	;	;	(	(
USAMIMDA	Y X	Y S	<b>4                                    </b>	Y Z	Y Z	453	384	343 186	235		
Contracts  Test and Evaluation	ć Z	Ç.	Č.	ę.	Ç.		Ì				
Organizations				į	;			•	9	Č	
Walter Reed Army	Y Z	<b>Y</b> Z	Y Y	¥ X	Y Y	2324	2018	1990	956		Cont
Inst of Research	<b>4</b>	Y X	¥Z.	Y Z	¥Z	360	582	374	100	Cont	Cont
Navy Laboratories	٧×	Y Z	<b>Y</b> Z	NA	NA	370	0	200	0	Cont	Cont
Government Furnished Property:	hed Property:	None			;		,		(4)	Ċ	č
Subtotal Product Development	clopment				Y :	1788	2634	757	655		Cont
Subtotal Support and Management	Management				¥;	623	611	529	367		
Subtotal Test and Evaluation	aluation				e e	2044	4033	3212	3090		
Total Project					Š	CCOO					
				Page	Page 8 of 18 Pages	ž			Exhibit R-3	<b>6-3</b>	
				,	, , , , , , , , , , , , , , , , , , ,						Itom 65

RDT&E BUDGET ITEM JUST	M JUST	FICATI	ON SHE	ET (R-2	<b>FIFICATION SHEET (R-2 Exhibit)</b>	t)		Fet	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE N.	PENUMBERAND TITLE 0603807A Medi Development	E NUMBER AND TITLE  J603807A Medical Systems Advanced  Jevelopment	ystems /	Advanced	_	£ 0	PROJECT <b>D809</b>
COST (in Thousands)	FY 1994 Actual	FY 1985 Eatimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D809 Medical Biodefense Drug/Vaccine	5525	0	0	0	0	0	0	0	0	٥

C. Other Program Funding Summary: Not Applicable

D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.

Page 9 of 18 Pages

Exhibit R-2

~

UNCLASSIFIED

Item 65

## Contracts NA NA NA NA NA NA NA NA NA NA NA NA NA		SPAM EL	MENT/00		ONCEASSIFIED  TOTAL	SEAKP.	MAN (D 2		A DATE		
Perunder And Vaildation   Decospool	טאר הפוטא	GIVAIN ELE	LINICIA I/L L			עבאטר אבון	-K) NAA	<u></u>	Ľ	ebruary 19	95
EV   1994   EV   1995   EV	BUDGET ACTIVITY 4 - Demonstration And V	/alidation			PE NUMBER 060380' Develo	AND TITLE 7A Medic	al System	s Advance	þe	# <b>O</b>	10JECT <b>809</b>
## Project    1994   11,19	A. Project Cost Breakdown			È	Ì	300	Ì	i de	,		
### Additional History and Planning Information  ### Additional Property	Test & Evaluation Product Development			5940 5940 4901		6000	0 0 0 0	0			
Organization Birtory and Planning Information           Organization Method/Type Award or Funding Obligation Activity Chine Vehicle EAC EXC EV1994 EV1994 EV1994 EV1995 EV1996 EV1997 Complete Program Vehicle Contract Apr 88 50556 50556 42176 1409 0 0 0 0 0 0 0         Private Private Private Program Vehicle Program Vehicle Program Office Private Apr 88 50556 50556 42176 1409 0 0 0 0 0 0 0         Private Program Private Program Private Private Private Private Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private Program Private	rroject Management Total			421 5916		0	00				
Contract	B. Budget Acquisition History a	nd Planning In	<b>formation</b>								
Method/Type Award or Performing Project Total   Fig. 1994   EAC FY 1994   EAC FY 1994   EAC FY 1994   EAC FY 1994   EAC FY 1994   EY 1995   EY 1996   EAC FY 1997   Complete Program of the Complete	Performing Organizations Contractor or										
sation         Activity         Office         Prior to         Fr/ 1994         FY 1995         FY 1996         FY 1996         FY 1996         Total EAC         Prior to			Performing	Project	Total						
BS 50556 50556 42176 1409 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ing	<b>Obligation</b>	Activity	Office	Prior to					Budget to	Total
18         50556         42176         1409         0         <	Activity Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
NA         NA         3492         0         0         0         0           NA         NA         286         0         0         0         0         0           NA         NA         417         0         0         0         0         0           NA         NA         417         0         0         0         0         0           NA         NA         421         0         0         0         0         0           NA         594         0         0         0         0         0         0           NA         5916         0         0         0         0         0         0	Salk Institute CPFF	Hons Apr 88	50556	50556	42176	1409	0	0	0	0	0
NA         NA         286         0         0         0         0           NA         NA         135         0         0         0         0         0           NA         NA         417         0         0         0         0         0           NA         NA         177         0         0         0         0         0           NA         421         0         0         0         0         0         0           NA         594         0         0         0         0         0         0           NA         5916         0         0         0         0         0         0		, Y	<b>Y</b> X	<b>A</b> Z	Y X	3492	0	0	0	0	0
NA NA NA 135 0 0 0 0 0  NA NA NA 417 0 0 0 0  NA NA 177 0 0 0 0  NA 421 0 0 0 0  NA 594 0 0 0  NA 5916 0 0 0 0  Exhibit R-3	Support and Management Organ	nizations	;	;	;		•	•	•	•	•
NA NA 417 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	٧	<b>∢</b> ∢ Z Z	<b>₹</b> ₹	<b>∀</b> ₹	<b>4</b> ₹ Z	286 135	00	<b>-</b>	0 0	00	0 0
NA NA 417 0 0 0 0 0  NA 177 0 0 0 0  NA 4901 0 0 0 0  NA 421 0 0 0 0  NA 594 0 0 0 0  NA 5916 0 0 0 0  Page 10 of 18 Pages  Exhibit R-3	Test and Evaluation Organizatio		•	4	:		•	>	•	>	
NA NA 177 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Army Laboratories NA		Y Y	ΝΑ	NA	417	0	0	0	0	0
NA 4901 0 0 0 0 0 0 0 0 NA 421 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Contracts	٧Z	<b>V</b>	٧Z	Y Z	177	0	0	0	0	0
NA 4201 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Government Furnished Property	y: None			;	7007	•	•	•	•	(
NA 421 0 0 0 0 0 0 0 0 NA 594 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Subtotal Product Development				₹ ;	4901	O '	0	o ·	0	5
NA 5916 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Subtotal Support and Management	***			¥ ;	421	0	0 0	0	0	0
Page 10 of 18 Pages Exhibit R-3	Subjoid lest and Evaluation				<b>4</b> 2	5016					0 0
					5			>	>	>	
				ć						c c	
				Page	100118 19	es			EXPIDIT	3	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	<b>IFICATI</b>	ON SHE	ET (R-1	2 Exhibit	t		DATE Fe	February 1995	56
BUDGET ACTIVITY 4 - Demonstration And Validation			P 96.	PE NUMBER AND TITLE 0603807A Medi Development	PE NUMBER AND TITLE 0603807A Medical Systems Advanced Development	ystems /	Advanced		E 0	PROJECT D811
COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to	Total Cost
D811 Military HIV Vaccine and Drug-Advanced Development	1836	181	2671	27.29	2011	1516	2114		2111 Continuing Continuing	Continuing

C. Other Program Funding Summary: Not Applicable

D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.

Page 11 of 18 Pages

Exhibit R-2

Item 65

4/6

RDT&E PROGRAM ELEMENT	GRAM ELE	EMENT/PR	OJECT C	OST BE	REAKDO	/PROJECT COST BREAKDOWN (R-3)		DATE F	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	alidation			PE NUMBER AND TITLE 0603807A Medi Development	AND TITLE  /A Medic  ment	PENUMBER AND TITLE 0603807A Medical Systems Advanced Development	s Advance	þe	E O	Р <b>ко</b> Јест <b>D811</b>
A. Project Cost Breakdown			7001	È	3001 A	7007 EA	5001 ASI	_		
Test & Evaluation Product Development			1821		193 0	2684 0	2743 2743 0			
Project Management Total			15 1836		0 193	0 2684	0 2743			
B. Budget Acquisition History and Planning Information	nd Planning In	<u>formation</u>								
Performing Organizations										
		Performing	Project	Total						
Performing or Funding Activity Vehicle	Obligation Date	Activity EAC	Office EAC	Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations: None	ions: None									
Support and Management Organizations Contract NA NA NA	nizations NA	<b>V</b>	¥Z	N A	15	0	0	0	0	0
릇										
oratories	₹ ;	¥ ;	Y :	¥ ;	250	0 ;	0	0	0 (	<del>6</del> (
Contracts  Covernment Furnished Property: None	None	ď Z	<b>₹</b> Z	<b>₹</b>	1/51	261	7084	2/43	Con	<b>E</b> S
Subtotal Product Development				N A	0	0	0	0	0	0
Subtotal Support and Management	•			Y S	15	0 5	0	0 0	0	0 (
Total Project				Ç Z	1836	193	2684	2743	Control	Cont
										-
										•
			Page	Page 12 of 18 Pages	es			Exhibit R-3	λ-3	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TSUL M	<b>IFICATI</b>	ON SHE	ET (R-2	Exhibit	t)		DATE <b>Fei</b>	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NU 060 Dev	PENUMBER AND TITLE 0603807A Medi Development	ntle Medical S nt	PENUMBER AND TITLE 0603807A Medical Systems Advanced Development	Advance		£ 0	PROJECT <b>D836</b>
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
D836 Combat Medical Materiel-Advanced Development	028	2923	2734	3008	2882	2978	2963	2959	Continuing	Continuing
C. Other Program Punding Summary: Not Applicable	plicable									
D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.  FY 1994	ental products	s will advanc	e through v	various event FY 1994	s throughou	t the FY. FY 1996	¥		FV 1997	
	7	. E.	1 2	3	4	7	ς 4	_	2 3	4
Silver Nylon Burn Dressing MLST 1					×					
Microencapsulated Antibiotic						×			×	
Ceptanosporm MLS 1 0/1 Self-Contained Ventilator MI CT 1 IDD					>					
Medical-Dental Filmless Imaging System					<		<b>×</b>			
MLST 2 IPR							•			
Intraosseous Infusion Device MLST 2 IPR							×			
			Page 13 of 18 Pages	8 Pages				Exhibit R-2	2	
			576							Item 65
		_	UNCLASSIFIED	SIFIED						

RDT&E PROGRAM ELEMENT/PROJECT	SAM ELE	EMENT/PR		OST BE	EAKDO	COST BREAKDOWN (R-3)	(	DATE F	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	idation			PE NUMBER AND TITLE 0603807A Med Development	AND TITLE 'A Medic ment	al System	Development  Development	þ	<u>.</u> 0	РRОЈЕСТ <b>D836</b>
A. Project Cost Breakdown										
Test and Evaluation			EY 1994	à	FY 1995 249	FY 1996 195	FY 1997			
Product Development			178		2019	1158	1720			
Project Management Total			527 851	•	695 2963	795 2148	303 2323			
B. Budzet Acquisition History and Planning Information	Planning Inf	ormation								
Performing Organizations										
Contractor or Contract										
_	Award or	Performing	Project	Total						
Bu	Obligation	Activity	Office	Prior to		Ì			Budget to	Total
Activity	Valc	EAK	EAL	1334	FT 1994	FT 1995	FT 1930	FY 1997	Complete	Program
Contracts NA	, Y	¥Z	X	Z	2	1384	850	1340	Cont	Jeo C
AN AC	Y.	¥Z	¥z	Y Y	176	635	308	380	Cont	Cont
Support and Management Organizations	ations									
USAMMDA	Y'A	Ϋ́	Y Y	N A	527	\$69	795	303	Cont	Cont
Contracts NA	Y X	Y Y	٧	¥	700	211	145	11	Cont	Cont
	į	;	į	;	•	:	,	;	į	(
Army Laboratories NA	Y S	<b>₹</b> Z	<b>Y</b> Z	Y Y	146	249	195	300	Cont	Cont
Subtotal Product Development	2000			Y X	178	2019	1158	1720	Cont	Cont
Subtotal Support and Management				NA	527	969	795	303	Cont	Cont
Subtotal Test and Evaluation				X	146	249	195	300	Cont	Cont
Total Project				Y V	851	2963	2148	2323	Cont	Cont
			Page 1	Page 14 of 18 Pages	Sä			Exhibit R-3	۲-3	
				577						Item 65

RDT&E BUDGET ITEM JUST	M JUST	<b>IFICATI</b>	FIFICATION SHEET (R-2 Exhibit)	ET (R-	Exhibit	()		DATE	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation			PE 2000	PE NUMBER AND TITLE 0603807A Medi Development	E NUMBER AND TITLE 0603807A Medical Systems Advanced Development	ystems /	Advanced		a 0	PROJECT D837
COST (in Thousands)	FY 1994 Actual	FY 1995 Eatimate	FY 1996 Estimate	FY 1997 Estimate	FY : 998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coart to	Total Cost
D837 Soldler System Protection-Advanced Development	0	0	1218	28	857	880	883	882	862 Continuing Continuing	Continuing

C. Other Program Funding Summary: Not Applicable

D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.

Page 15 of 18 Pages

**\$78** 

Item 65

Exhibit R-2

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	RAM ELE	MENT/PR	OJECT (	COST BF	<b>EAKDO</b>	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation	lidation			PE NUMBER AND TITLE 0603807A Medi Development	AND TITLE 7A Medic ment	al System	PE NUMBER AND TITLE 0603807A Medical Systems Advanced Development		ā O	РКОЈЕСТ <b>D837</b>
A. Project Cost Breakdown										
Test & Evaluation			FY 1994		FY 1995 0	FY 1996 0	FY 1997	<b>~</b> 1. <b>~</b> .		
Project Management Total				200	000	52 52 1224	848 20 868			
B. Budget Acquisition History and Planning Information	Planning Inf	ormation								
Performing Organizations Contractor or										
	Award or	Performing	Project	Total						
Activity Vehicle	Obligation Date	Activity EAC	Office	Prior to EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations   Contracts   NA	84 A 2	7	7	<b>V</b>	c	C	1133	070		, (
Manage	ations	•	1		>	>	7/11	6		
USAMMDA NA NA NA NA Test and Evaluation Organizations: None	NA None	Y Y	Y Y	Y Y	0	0	52	898	Cont	Cont
Government Furnished Property: None	None			,						
Subtotal Product Development Subtotal Support and Management				∢ ∢ Z Z	00	00	1172	848 20	Cont	Cont
Subtotal Test and Evaluation				;	, ,	, (		}		
I otal Project				¥Z,	0	0	1224	898	Cont	Cont
			Page	Page 16 of 18 Pages	Sã			Exhibit R-3	3	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit	(1		DATE Fet	February 1995	95
BUDGET ACTIVITY 4 - Demonstration And Validation			PE NI 060	PE NUMBER AND TITLE 0603807A Medi Development	E NUMBER AND TITLE  1603807A Medical Systems Advanced  1evelopment	ystems /	dvanced		ă O	Р <b>R</b> ОЈЕСТ <b>D993</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D993 Medical Defense Against Chemical Threats	5454	6071	0	0	0	0	0	0	0	0

C. Other Program Funding Summary: Not Applicable

D. Schedule Profile: Multiple medical developmental products will advance through various events throughout the FY.

Page 17 of 18 Pages

Exhibit R-2

Item 65

580

No.

RDT&E	ROGE	SAM ELE	RDT&E PROGRAM ELEMENT/PROJECT		OST BE	EAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	995
BUDGET ACTIVITY 4 - Demonstration And Validation	Ind Vali	dation			PE NUMBER AND TITLE 0603807A Medi Development	AND TITLE  A Medic  ment	PE NUMBER AND TITLE 0603807A Medical Systems Advanced Development	s Advance	Þe		Р <b>R</b> ОЈЕСТ <b>D993</b>
A. Project Cost Breakdown	=			FV 1994	}	77 1004	πV 1996	FV 1997			
Test & Evaluation				2516	1	3620	0 (	0			
Product Development Project Management				1355		638 1813	000	000			
i otal  B. Budget Acquisition History and Planning information	story and	Planning Inf	ormation			1/00	>	•			
Performing Organizations	_										
<b>L</b>	30	•			Ē						
Government Metho	Method/Type or Funding	Award or Obligation	Pertorming Activity	Project Office	Frior to					Budget to	Total
	الد الد	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	ganization									i	ļ
Contracts		٧٧	٧×	¥Z	Y Y	1583	638	0	0	Cont	Cont
Manag	t Organiz	ations	;	;	;	• • • • • • • • • • • • • • • • • • • •	-	•	•	Ċ	C
USAMMDA NA		<b>4</b>	<b>∀</b> ₹ %	<b>∢</b> ₹ Z	<b>₹</b> ₹	202	1328	<b>-</b>			
Contracts	anoite din	Ç	<b>C</b>	Ç	<b>C</b> .	3		>	>		)
A raw, 1 aboratories NA	INTZ MTIORS	42	<b>A</b> M	Ą	, Z	311	345	C	0	Cont	Cont
		( <b>4</b>	Y.	¥ Z	Ž	875	1555	0	0	Cont	Cont
lem Lab		Jan 89	44549	44549	31706	1330	1720	0	0	Cont	Cont
Government Furnished Property:		None									
Subtotal Product Development	ient				٧Z	1583	638	0	0	Cont	
Subtotal Support and Management	gement				Y Y	1355	1813	0	0	Cont	
Subtotal Test and Evaluation	u.				<b>∀</b> Z	2516	3620	0	0	Cont	Cont
Total Project					Y Y	5454	6071	0	0	Cont	Cont
				Page	Page 18 of 18 Pages	es			Exhibit R-3	3	
					103						Item 65
					180						

RDT&E BUDGET ITEM JU	EM JUS	TIFICAT	ION SH	IEET (R	STIFICATION SHEET (R-2 Exhibit)	it)		DATE FeI	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	Jevelopm	ment	PE NI 060	PE NUMBER AND TITLE 0604201A Aircr	E NUMBER AND TITLE  J604201A Aircraft Avionics	vionics			د د	PPOJECT DC97
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Eetimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimete	Coat to Complete	Total Cost
DC97 Aircraft Avtonics	7358	14236	22044	7003	1360	136.	0	0	0	46430

battlefield (commonly referred to as "digitization of the battlefield"). The following tasks in this Program Element support research efforts in the engineering and A. Mission Description and Budget Item Justification. This PE funds the development of avionics systems required to horizontally and vertically integrate the manufacturing development phases of these digitization of the battlefield systems and are therefore correctly placed in Budget Activity 5.

# Project DC97 - Aircraft Avionics:

- acquisition, fire support, assessment of enemy deployments, and logistical support. It also provides Global Time settings for communication systems and assists in situational awareness and prevention of fratricide. The RDT&E efforts address the Army aircraft weight, space and power limitations by embedding a GPS circuit The Global Positioning System (GPS) provides Army aviation with extremely accurate and secure location and velocity information critical to navigation, target card into existing onboard avionics systems and the Embedded Inertial Navigation System (EGI) (Air Force lead) for attack and scout aircraft
  - The AN/ARC-220 NOE Communications High Frequency (HF) radio provides a long-range (300 kilometers) nap-of-earth (NOE), non-line-of-sight digital and voice communication capability which is reliable, secure, easy to operate, with automatic link establishment and electronic counter-countermeasures. The AN/ARC-120 will be form/fit interchangeable with the AN/ARC-199 HF radio, meet military standards for compatibility with the 1553 data bus, night vision lighting, data transmission, and shipboard operations.
- poet relocation. Interoperability is enhanced with this system by providing the capability to communicate digitally with Navy or Air Force close air support as well as control (C2) functions in the UH-60 h. licepter. The UH-60 A2C2S system will enable the commander and essential staff to remain highly mobile with the capability A2C2S will play a major role in eliminating costly fratricide incidents via the capability to closely monitor and control operations. Satellite communications provide The APC2S is in regense to real world reeds of combat maneuver commanders to perform highly mobile and responsive digital, voice, and imagery command and communications. It also provides digitized battlefield communications links with Army combined arms team members, joint service and combined force elements, in interject critical C2 across the designated battle area without sacrificing access to information products or jeopardizing continuity of operations due to command The Army Airborne Command And Control System (A2C2S) functions as a highly mobile command post. When mounted in the UH-60 helicopter with auxiliary channel scanning, and intercommenications facilities for up to six operators, and joint interoperability as well as maritime and air traffic control communications. security operations. The A2C2S is used to provide C2 for disaster relief, peacekeeping, L. g interdiction, and both low and high intensity conflict missions. The relaying target information. This system will allow Army aviation forces access to C2 and situational awareness information for conduct of close, deep, rear, and equipment, it provides tactical voice, data, and imagery digitized battlefield communications both in secure and nonsecure modes for corps, division, and brigade commanders. The system provides battle commanders access to critical situational awareness and off-board national asset intelligence information via satellite access to tactical communication systems and enables communication with the force and command structure from ICS down to battalion when required

# FY 1994 Accomplishments:

Initiated Engineering and Manufacturing Development (EMD) of the AN/ARC-220 NOE Communications HF Radio (2108)

Page 1 of 5 Pages

Item 66

L	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	oit) DATE February 1995	
<u></u> 8	BUDGET ACTIVITY  5 - Engineering And Manufacturing Development  0604201A Aircraft Avionics		1
<u>.                                    </u>	<ul> <li>Initiated the following for A2C2S:</li> <li>Enhanced Communications Interface Technology (ECIT) / Work Station Design: Prototype and demonstrate (1652)</li> <li>Command, Control and Communication Risk Reduction Study (1100)</li> <li>Antenna Study and Antenna Prototypes (800)</li> <li>Program Management (906)</li> <li>Procure Multi-Application Tactical Terminal and Commander's Situational Awareness Workstation (580)</li> <li>Aircraft System Integration Demonstration Support (212)</li> </ul>	monstrate (1652)	<del>T</del>
<u> </u>	<ul> <li>FY 1995 Planned Program:</li> <li>Continue AN/ARC-220 NOE Communications HF Radio EMD Effort (4858)</li> <li>Initiate Preproduction Qualification and continue Project Management Support for AN/ARC-220 NOE Communications HF Radio (885)</li> <li>Conduct Non-Recurring Engineering for EGI AH-64C/D (300)</li> <li>Complete AH-64C/D Engineering Change Proposal EGI Integration (3400)</li> <li>Complete AH-64C/D Engineering Prototype and Demonstration (4600)</li> <li>SBIR/STTR (195)</li> </ul>	ommunications HF Radio (885)	<del></del>
4	Complete AN/ARC-220 NOE Communications HF Radio EMD Effort (2706)  Initiate Integration Contract for Design of A Kit and T-sting for AN/ARC-220 NOE Communications HF Radio (2101)  Continue Program Management support for the AN/ARC-220 (507)  Initiate development of Enhanced ECIT: 6 A2C2S prototypes (6250)  Continue Design and Develop A2C2S Workstation Consoles (3450)  Develop Technical Documentation: Test & Integration procedures for A2C2S Engineering Development Model (EDM) (700)  Develop A2C2S Workstation Software (3175)  Continue development of A2C2S Antenna System - Phase II (400)  Initiate Test and Demonstration - A2C2S EDM (880)  Continue Program Management support for the A2C2S (1875)	Radio (2101) Model (EDM) (700)	
<u> </u>	<ul> <li>FY 1997 Planned Program:</li> <li>Continue A2C2S Development, Test and Demonstration of Enhanced ECIT (1790)</li> <li>Continue Program Management Support for the A2C2S Program (247)</li> </ul>		

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATIC	ON SHE	ET (R-2	Exhibit			DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	Developme	ment	PE NU 060	PENUMBER AND TITLE 0604201A Aircr	Aircraft Avionics	vionics			ă O	PROJECT DC97
B. Program Change Summary										
Previous President's Budget Appropriated Value Adjustments to Appropriated Value (Total PE)		FY 1994 5061 5061 2297		FY 1995 14433 14238	FY 1996 6768	FY 1997 1047	בור			
b. Reprogramming total (2376) Current Budget Submit/President's Budget		7358		14238	22044	2037	7			
C. Other Program Purding Summary Aircraft Procurement, Army (APA):	Ì	i							J.	Total
Airborne Avionics - AA0700BLIN 1025 Airborne Communications -AA0705 BL 1037 Airborne Command and Control Console AA0710 BLIN 1030	8664 7397 0	18853 18853 5674 0	25597 3981 3981	35732 35732 50084 20277	50484 30172	FY 1999 3550 49814 30212	FY 2000 35187 49768 29861	FY 2001 35433 0 29859	Cont'd Cont'd Cont'd Cont'd	Cont'd 238818 Cont'd
D. Schedule Profile:	FY 1994	•	£ ,	FY 1995	•	FY 1996	,		FY 1997	
Develop EC1T/Workstation Prototype Define C31 Architecture Award ARC-220 NDI EMD Contract Complete EG1 Non-recurring Engr AH/64 EG1 Integration on AH-64D/C (ECP) Continue AN/ARC-220 NDI EMD Effort Conduct Preproduction Qualifications/ AN/ARC-220 HF radio Develop Enhanced ECIT (A2C2S) A2C2S Prototype Integration	n N	****	- ×	~ ×× ×	<b>-</b>	·· ×	<b>→</b>	-	e 6	<b>→</b>
A2C2S Workstation Software Dev A2C2S Tests and Demonstrations Complete Enhanced ECIT (A2C2S)					××			×		
			Page 3 of 5 Pages	Poges				Exhibit R-2	2	

Item 66

RDT	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PR	/PROJECT COST BREAKDOWN (R-3)	OST BE	EAKDO	WN (R-3		DATE Fe	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	) And Manu	facturing l	Development	<b>+</b>	PE NUMBER AND TITLE 0604201A Airci	AND TITLE	איזידוב Aircraft Avionics	8		ğ Ω	PROJECT DC97
A. Project Cost Breakdown	a kdown			72	Ì	<b>3</b> 00.	7007	1007			
Product Development				5344		13353	19662	1790			
Program Management Support: Government In-House Support	nt Support: use Support			2014		885	1732	102			
PATS Contracts Total				0 7358		0 14238	650 22044	145 2037			
B. Budget Acquisition History and Planning Information:	ion History and	l Planning Inf	ormation:								
Performing Organizations	zations										
Contractor or	Contract	•									
Government	Method/Type	Award or	Performing	Project	Total						
Activity	or runging Vehicle	Coligation	Activity	EAC	FY 1994	FY 1994	FY 1995	FV 1996	FY 1997	Sudget to	Total
Product Development Organizations	nt Organization	ns n									
Rockwell	FFP/OPT	Aug 94	N/A	N/A	0	1000	5052	4807			10665
International											
Cedar Rapids, IA											
McDonnell	SS/CPIF	Oct 94	N/A	N/A	0						
Douglas (EGI)							3400				3400
Honeywell (EGI)	FFP/OPT	Mar 95	<b>Y</b> /Z	N/A	0		300				300
Naval Research	MIPR	Sep 92				4344	4601	14855	1790	Cont'd	Cont'd
Support and											
Management											
Organizations PM Aviation								1107		Cont'd	Cont'd
Electronic Combat											
Communications						2014	412	006	165	Cont'd	Cont'd
and Electronics											
Command											
				Page	Page 4 of 5 Pages	S			Exhibit R-3	-3	
					585						Item 66

RDT	&E PROGI	RAM ELE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	SJECT (	COST BE	REAKDO	WN (R-3		DATE	February 1995	98
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	y And Manuf	facturing	Development		PE NUMBER AND TITLE 0604201A Aircr	AND TITLE	Aircraft Avionics				
Contractor or Contract Government Method/Type Awai Performing or Funding Oblig Activity Vehicle Date US Aviation and Troop Command Test and Evaluation Organizations: N/A	Contract Method/Type or Funding Vehicle 1 Organizations	Award or Obligation <u>Date</u> : N/A	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995 473	FY 1996 375	FY 1997 82	Budget to Complete Cont'd	Total Program Cont'd
Government Furnished Property: - Not Applicable	bed Property: -	Not Applicab									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	velopment 1 Management aluation					5344 2014 0 7358	13353 885 0 14238	19662 2382 0 22044	247 247 0 2037	Con't Con't O	Con't Con't Con't
				Pag	Page 5 of 5 Pages	رب			Exhibit R-3	ຼຸ	
											14.

Item 66

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	HS NOI	IEET (R	-2 Exhib	it)		DATE FeI	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Developr	Jevelopm	ment	PE NI	PE NUMBER AND TITLE 0604220A Kiow	PENUMBER AND TITLE OG04220A KIOWA Warrior	ırrior			20	PROJECT D538
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D538 Crew Station Mission Equipment Trainer (CSMET)	0	0	728	1194	0	0	0	0	0	1920

the actual aircrast are not available the aviator cannot continue to practice crew skills and as such the aircrew skills continue to decay rapidly. Maintaining a high level of through the use of the actual aircraft is at best limited due to the inability to employ total system capabilities under combat conditions (i.e. reapon systems, etc.). When The Crew Station Mission Equipment Trainer (CSMET) is a desktop simulation training device that will be aircrew skill has direct impact on combat readiness and proficiency. The CSMET is a New Start. The project in this Program Element supports research efforts in the Simulations (TDSS) available to fielded Kiowa Warrior units. Currently, the aircraft itself provides the only primary sustainment training device. Training provided designed to support training requirements for the OH-58D Kiowa Warrior flight crew. The CSMET effort responds to the lack of Training Devices, Simulators or engineering and manufacturing development phases of the acquisition strategy and is, therefore, correctly placed in Budget Activity 5 A. Mission Description and Budget Item Justification

target handover system, communication and navigation equipment, mast mounted sight cockpit controls, and the pilot display unit. The CSMET will network with other Project D538 - Crew Station Mission Equipment Trainer (CSMET): The Crew Station Mission Equipment Trainer (CSMET) will train crew members in the operation and employment of the Kiowa Warrior mission equipment package. Simulations systems will include the weapons systems, aviation survivability equipment, automatic simulation devices for collective training.

FY 1994 Accomplishments: Project not funded

FY 1995 Planned Program: Project not funded

# FY 1996 Planned Program:

- Award Development Contract (726)
- Initiate Development of Prototype Device

# FY 1997 Planned Program:

- Complete Prototype Build/System Integration (748)
- Conduct Joint Preliminary Developmental Testing (148)
- Conduct Final Developmental/Operational Testing (298)

Page I of 3 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION	<b>FIFICATION SHEET (R-2 Exhibit)</b>	Exhibit		DATE FAN	February 1995	[
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604220A Kiowa Warrior	ritle Gowa Wa	rrior		PROJEC D538	PROJECT D538
B. Program Change Summary FY 1994	FY 1995	FV 1995	FV 1997			
Previous President's Budget Appropriated Value Adjustments to Appropriated Value	0	0	0			
Current Budget Submit/President's Budget	0	726	1194			
C. Other Program Funding Summary: There are no other related RDTE efforts.	forts.				É	Ę
APA Budget Activity 2	EY 1996 EY 1997	FY 1998	EY 1999 FY 2000	FY 2001	Compl	e So
AZ2200 Kiowa Warrior (CSMET)	430	2840	7130 3950	2370	N/A	16720
D. Schedule Profile  FY 1994	FY 1995		FY 1996	<b>E</b> ,	FY 1997	
Award Development Contract Initiate Development of Prototype Device Complete Qualification Testing Begin Prototype Build/System Integration Conduct Preliminary Joint Developmental Testing Complete Final Developmental			× ×	· ××		
Prototype Delivery Ready for Training						××
	Pare 2 of 3 Pares			a e e e e e e e e e e e e e e e e e e e		

588

;

RDT	RDT&E PROGRAM ELEMENT	RAM ELE		JECT C	OST BR	EAKDO	PROJECT COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	y And Manu	facturing E	)evelopment		PE NUMBER AND TITLE 0604220A KION	AND TITLE A Kiowa	этіге <b>Kiowa Warrior</b>			# O	PROJECT <b>D538</b>
A. Project Cost Breakdown	zakdown			FY 1994	FY	FY 1995	FY 1996	FY 1997			
Engineering Development Prototype Build/System Integration Developmental Testing Government Support of Developmental Testing Operational Testing Government Support of Operational Testing Total	pment em Integration ing t of Development t of Operational	atal Testing Testing					726	748 119 29 199 99			
B. Budget Acquisition History and Planning Information	ion History and	d Planning Inf	ormation								
Performing Organizations Contractor or Contra	zations Contract										
Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations   STRICOM   MIPR	int Organizatio	JAN 96	726	726	0	0	0	726	0	0	726
Orlando, FL	MIPR	JAN 97	1194	1194	0	0	0	0	1194	0	1194
(Contractor TBD)  Support and Management Organizations: N/A	gement Organt	zations: N/A									
Test and Evaluation Organizations: N/A Government Furnished Property - Not Applicable	n Organization	ns: N/A ·Not Amicabl	_0								
Subtotal Product Development	velopment	44						726	1194		1920
Subtotal Support and Management	d Management										
Subtotal Test and Evaluation   Total Project	valuation							726	1194		1920
,											
				4	6					ç	
				Page	Page 3 of 3 Pages	5			באחוסוו א-S	3	];
					589						Item 67

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SOF WE	<b>TIFICAT</b>	HS NOI	EET (R	-2 Exhib	it)		DATE Fet	February 1995	95
9008 2 - 1	BUDGET ACTIVITY  5 - Engineering And Manufacturing Develope	evelopm	ment	PE NU	PE NUMBER AND TITLE 0604223A COM	0604223A Comanche					
	COST (in Thousends)	FY 1994 Actual	FY 1985 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
	Total Program Element (PE) Cost	365185	488567	199103	298609	298270	398349	424774	533138	Continuing Continuing	Continuing
DC72	DC72 T800 Engine Engineering Development (LH)	45248	80162	36836	36840	36827	36834	128821	36913	Continuing	Continuing
D327	D327 Comanche	319836	408405	162268	261769	261443	361515	367803	496225	496225 Continuing Continuing	Continuing

system to include training and logistic support. The projects in this program element support research efforts that complete Demonstration/Validation (Dem/Val) prototype Victuam era fleet (AH-1, OH-6, and OH-58A/C). Project DC 72 provides for development and qualification of the T800 and growth engines and air vehicle support for weather/high/hot/stand-off capability) and is a key component on the digitized battlefield in winning the information war. The Comanche will replace the obsolescent A. Mission Description and Budget Item Justification: This program element provides for the development and operational testing and evaluation of the RAH-66 integration of the same into the Comanche aircraft. Project D327 provides for development of the airframe, mission equipment package, and integration of the whole Comanche and the T800 growth engine. The Comanche is a multi-mission aircraft optimized for the critical battlefield mission of tactical armed reconnaissance. It efforts and transition into the engineering and manufacturing development phase of the axquisition strategy and are therefore correctly placed in Budget Activity 5. provides a globally self-deployable attack platform for light/contingency forces. Comanche is the solution to the reconnaissance deficiencies (no night/adverse

Project DC72 - T800 Engine Engineering Development (LH): This project includes tasks to design, develop and qualify an advanced technology engine. The project is for the development of a growth T800 engine, utilizing the technology developed and qualified on the 1200 SHP class baseline T800 engine. The growth engine is for the Army's new RAH-66 Comanche and other applications.

## FY94 Accomplishments:

- Continued growth engine engineering development/First Engine to Test (38925)
- Completed delivery of basic flight test engines
- Continued basic engine air vehicle support (6324)

## FY 95 Planned Program

- Continue growth engine development (57854)
- Conduct growth engine Critical Design Review (CDR)
- Continue basic engine air vehicle support (10700)
- Continue engine development testing (9941)
  - SBIR/STTR (1667)

Page 1 of 9 Pages

8

Exhibit R-2

Item 68

libit) DATE February 1995	
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	BUDGET ACTIVITY PE NUMBER AND TITLE

0604223A Comanche

5 - Engineering And Manufacturing Development FY 96 Planned Program

Continue basic engine air vehicle support (8900)

- Continue growth engine development (18357)
  - Continue engine development testing (9578)

### FY 97 Planned Program

- Continue basic engine air vehicle support (8600)
  - Continue growth engine development (15343)
    - Continue engine development testing (12897)

battlefield in the close, deep and rear operations; provide a decisive air cavalry capability in day, night, and adverse weather. It will be operationally tailorable to regional Project D327 - Comanche: The Comanche helicopter is a highly sustainable and operationally flexible air cavalry system, incorporating significant reductions in personnel and support equipment, capturing the latest combat technologies and capable of accepting upgrades to meet ever-changing threats. It will dominate the conflicts and provide the battle commander with timely, detailed reconnaissance information and an unprecedented level of lethality.

## FY 94 Accomplishments

- Continued Demonstration/Validation (Dem/Val) prototype engineering development (200586)
  - Continued contractor development test (71320)
- Continued air vehicle manufacturing (48030)

#### 95 Planned Program 7

- Continue Dem/Val prototype engineering development (276210)
  - Continue contractor development test (85999)
    - Continue air vehicle construction (37708)
- SBIRVSTTR (8488)

## FY 96 Planned Program

- Begin digitization effort (16232)
- Continue Dem/Val prototype engineering development (98972)
  - Conduct first flight, prototype # 1 (38258)
- Continue manufacturing of prototype # 2 (8806)

Page 2 of 9 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION	SHEET (R.	2 Exhibit)		DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Ę	PE NUMBER AND TITLE 0604223A Com	O TITLE Comanche		
<ul> <li>FY 97 Planned Program</li> <li>Continue digitization effort (26028)</li> <li>Continue Dem/Val prototype engineering development (175901)</li> <li>Continue flight test program for prototype # 1 (57387)</li> <li>Complete manufacturing of prototype # 2 (2453)</li> </ul>	01)				·
B. Program Change Summary Previous President's Budget Appropriated Value Adjustments to Appropriated Value (Total PE) a. SBIR/STTR decrement (-5542)	FY 1994 366728 366728 (1543)	FY 1995 \$25182 488567	FY 1996 373977 199103	FY1997 499242 298609	
b. Reprogrammed into PE (3999) Current Budget Submit/President's Budget	365185	488567	199103	298609	
Change Summary Explanation: Funding: FY 96 (\$-174M) and FY 97 (\$-199M) funding has been reduced from the previous submittal IAW Department of Defense (DoD) decision to restructure the program. Schedule: The current schedule is presently being reviewed. Schedule may be revised after senior level approval of the program. Technical: None	oen reduced fro	been reduced from the previous submittal IAW Departmer Schedule may be revised after senior level approval of the	obmittal IAW De	partment of Defeni 1 of the	se (DoD) decision to restructure
	G G	2000			1 1 1 1 1 1 1
	X0	592			Item 68

RDT&E BUDGET ITEM JUSTIFICATION	M JUST	FICATION		SHEET (R-2 Exhibit)	Exhibit	3		DATE Fe	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NL 060	PE NUMBER AND TITLE 0604223A Com	TITLE Comanche	63			Ē O	PROJECT DC72
COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC72 T800 Engine Engineering Development (LH)	45249	80162	36836	36840	36827	36834	36971	36913	Continuing	Continuing
C. Other Program Funding Summary: There a	There are no other re	clated RDT&	E or other a	related RDT&E or other appropriation efforts.	n efforts.					
D. Schedule Profile										
_	FY 1994 2 3	4	- E 2	FY 1995 2 3	4	FY 1996	% ~ 4	-	FY 1997	•
First engine to test	<b>×</b>		•		•	ı		•	•	•
Completed delivery of basic flight test	*									
engines Continued basic engine air vehicle		>								
poddns		<								
Continue growth engine development			×							
Continue engine development testing			×							
Conduct growth engine CDR				×						
Award change order to accommodate					×					
Continue basis engine air achiele access					;					
Continue growth engine development					<b>×</b> >					
Continue engine development testing					< ≻					
Continue basic engine air vehicle support					<			×		
Continue growth engine development								: ×		
Continue engine development testing								×		
			Page 4 of 9 Pages	Pages				Exhibit R-2	2	

RDT	RDT&E PROGRAM ELEMENT	RAM ELE		PROJECT COST BREAKDOWN (R-3)	OST BR	EAKDO	WN (R-3		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	And Manu	facturing D	Sevelopment		PE NUMBER AND TITLE 0604223A COM	AND TITLE  A Comanche	nche			g Q	PROJECT DC72
A. Project Cost Breakdown	akdown			72	È	*00	7001 72	F001 V2			
F oduct Development Program Management Support Government Furnished Personnel/Equipment/Facilities	t st Support ed Personnel/Eq	luipment/Facili	ili Si	44898 44898 351 0	79917 79917 245 0	79917 245 0	71 1990 36635 200 0	36640			
Test & Evaluation Total			:	0 45249	<b>36</b>	0 80162	0 36835	0 36840			
B. Budget Acquisition History and Planning Information	on History and	1 Planning lof	ormation								
Performing Organizations Contractor or Contractor or	zations Contract										
Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations LHTEC (0453)	int <b>Organizatio</b> C/CPFF	ns April 92	TBD	180	46451	44086	79217	36635	36640	Cont	Cont
LHTEC (B017)	C/FFP	Jul 85	TBD	TBD	275884	812	700	0	0	0	Cont
AVCO (B019)	C/FFP	Nov 84	128526	128526	128526	0	0	0	0	0	128526
Support and Management Organizations	gement Organi	zations			.,,,,,	-	101	9	91	2	, and
Comanche PMO & Gov't Agencies	MIPR				75071	/11	161	061	OCI		
PATS contracts	C/FFP		TBD	TBD		\$	54	20	20	Cont	Cont
Rail	C/FFP	Sep 87	OBT	<b>TB</b>	2626	180	0	0	0	Cont	Cont
Test and Evaluation Organizations   Gov't Agencies   MIPR	n Organization MIPR	2			9613	0	0	0	0	Cont	Cont
				Page	Page 5 of 9 Pages	<b>1</b> 2			Exhibit R-3	<b>k-3</b>	
											Itom 60

594

Item 68

RD	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PROJEC	I/PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE F8	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	ig And Manu	facturing [	<b>Development</b>	PE NUMBER AND TITLE 0604223A Com	VE NUMBER AND TITLE 0604223A Comanche	ıche				
Government Furnished Property Cont act Method/Type	ished Property Cont. act Method/Type	Award or		Total						
Item Description	or Funding Vehicle	Obligation Date	Delivery <u>Date</u>	Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Support and Management Property None Support and Management Property Gov't Agencies MIPR Test and Evaluation Property: None	ical respecty. No Agement Propert MIPR on Property: No	ine ty		13129	C	0	0	0	Cont	Cont
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	ev-lopment nd Management evaluation			Total Prior to FY 1994 450861 27797 9613	FY 1994 44898 351 0 45249	FY 1995 79917 245 0 80162	FY 1996 36635 200 0 36835	FY 1997 36640 200 0 36840	Budget to Complete Cont Cont Cont	Total Program Cont Cont Cont

NOTE: A Defense Acquisition Board review of the program is scheduled for March 1995.

Page 6 of 9 Pages

Exhibit R-3

5 - Engineering And Manufacturinyi Development         PE NUMBER AND TITLE           5 - Engineering And Manufacturinyi Development         1 Y 1994         FY 1995         FY 1996         FY 1997         FY 1997           COST (in Thousands)         ADA         319906         400-405         15208         281789         281789         FY 1997           C. Other Program Funding Summary         FY 1994         FY 1995         FY 1995         FY 1995         FY 1997         FY 1995         FY 1997         <	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	it)	DATE	February 1995	95
17 1994   FY 1995   FY 1996   FY 1997   FY 1997   FY 1994   FY 1995   FY 1995   FY 1995   FY 1994   FY 1995   FY 1995   FY 1995   FY 1994   FY 1994   FY 1995   FY 1994   FY 1995   FY 1994   FY 1995   FY 1	E NUMBER AND TITLE  1604223A Comanche	he		r O	PROJECT D327
90ment 105314 34522 EY 1996 EY 1997 EY 8 Dev 79839 22479 FY 1994 FY 1999 FY 1995 FY 1995 FY 1994 X* X* X* X* X* X* X* X* X* X* X* X* X*	<b> </b>	FY 1999 FY 2000 Estimate Estimate	oo FY 2001 ate Estimate	Cost to Complete	Total Cost
ppment 105314 34522 g Dev 79839 22479 FY 1994 FY 1994 FY 1994 X* X* X* X* X* X* X* X* X* X* X* X* X*		361515	387803 496225	Continuing	Continuing
00 Comanche 8 I GA Longbow Engineering Development 105314 34522 12479 12479 12 3 4 1 2 3 12 3 4 1 2 3 13 2 3 4 1 2 3 14 2 3 15 2 3 4 1 2 3 15 2 3 4 1 2 3 16 2 3 4 1 2 3 17 2 3 4 1 2 3 18 2 3 4 1 2 3 19 2 3 4 1 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 1 3 3 19 2 3 4 3 4 3 19 2 3 4 3 4 3 19 2 3 4 3 4 3 19 2 3 4 3 4 3 19 2 3 4 3 4 3 19 2 3 4 3 4 3 19 2 3 4 3 4 3 19 2 3 4 3 4 3 19 2 3 4 3 4 3 19 2	1	EY 1999 FY 2000	000 FY 2001	To Compl	Tota So So So
105314 34522 79839 22479 FY 1994 FY 1995 ** X*			0	Cont	Con
FY 1994 FY 1995  N*  prototype opment to accommodate to accommodate  Prototype common fort  Prototype common fort  Prototype common fort  Prototype common fort fort  Prototype common fort fort fort fort fort fort fort fort					384022 76179
K* X*	FY 1995 2 3 4 1	FY 1996 2 3	-	FY 1997 2 3	4
te X X X X X X X X X X X X X X X X X X X	•	,			
te X X X X X X X X X X X X X X X X X X X		•			
te X X X X X X X X X X X X X X X X X X X					
te X X X X A Dave 7 of 9 Pages					
nmodate pe # 1					
i development order to accommodate or.  Val prototype development ion effort Flight, Prototype # 1 zation efforts Val prototype development t test program  Page 7 of 9 Pages					
order to accommodate or.  Val prototype ; development ion effort Flight, Prototype # 1 ization efforts  Val prototype ; development t test program	;				
or.  Val prototype ; development ion effort Flight, Prototype # 1 rzation efforts  Val prototype ; development t test program	×				
Val prototype ; development ion effort Flight, Prototype # 1 zation efforts Val prototype ; development t test program	>				
		×			
		~			•
		×			
			×		
			×		
			i		
Page 7 of 9 Pages			×		
	of 9 Pages		Exhibit R-2	-2	
965	968				Item 68

									DATE		
RDT8	LE PROG	RDT&E PROGRAM ELEMENT	EMENT/PR(	/PROJECT C	OST BR	EAKDO	COST BREAKDOWN (R-3)			February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	And Manu	facturing [	Development		PE NUMBER AND TITLE 0604223A COM	AND TITLE  A Comanche	che			g Q	PROJECT D327
A. Project Cost Breakdown	акдомп			FY 1994	FY 1995	995	FY 1996	FY 1997			
Product Development Program Management Support Government Furnished Personnel/Equipment/Facilities Test and Evaluation Total	t Support d Personnel/Ex	quipment/Facil	lities	302764 16836 89 247 319936	37	376822 29673 400 1510 408405	142268 17000 1000 2000 162268	241769 17000 1000 2000 261769			
B. Budget Acquisition History and Planning Information	on History an	d Planning In	<u>formation</u>								
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity	cations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity	Project Office EAC	Total Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations Boeing Sikorsky C/CPIF	nt Organizatio C/CPIF	ons April 91	OBT.	TBD	1040080	302764	376822	142268	241769	Cont	Cont
JPO A004 Other Completed					370288	0	0	0	0	0	370288
Contracts Support and Manager Rail CA HSI PATS contracts Cher Contracts CHONOGOV't	FELL PARTS FELL PARTS	Organizations Sep 87 Oct 91	<b>TBD</b> 12236 TBD TBD	<b>TBD</b> 12236 TBD TBD	21736 6164 0 5547 50632	5358 2972 0 1823 6683	5454 3100 0 1535 19584	3000 0 0 1000 13000	3000 0 0 1000 13000	Cont Cont Cont Cont	Cont 12236 Cont Cont
Agencies Test and Evaluation Organizations Gov't Agencies MIPR	1 Organization MIPR	<b>\$</b> 5			6032	247	1510	2000	2000	Cont	Cont
				Page	Page 8 of 9 Pages	<b>.</b>			Exhibit R-3	(-3	
					597						Item 68

597

RDT&E PROGRAM ELEMENT/PROJECT	COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE		
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development		AND TITLE  3A Comanche	nche		4	repruary 1995	G <sub>P</sub>
Government Furnished Property  Contract  Method/Type Award or	1991						
	Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Support and Management Property Other Gov't Agencies Test and Evaluation Property: None	9729	88	400	1000	1000	Cont	Cont
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1994 1410368 93808 6032	FY 1994 302764 16925 247 319936	FY 1995 376822 30073 1510 408405	FY 1996 142268 18000 2000 162268	EY 1997 241769 18000 2000 261769	Budget to Complete Cont Cont Cont	Total Cont Cont Cont
NOTE: A Defense Acquisition Board review of the program is scheduled for March 1995	March 1995.						
ď	Page 9 of 9 Pages	fa			Exhibit R-3	3	
5	598 UNCLASSIFIED	٥					Item 68

	RDT&E BUDGET ITEM JU	SUL M	TIFICAT	HS NO!	EET (R	STIFICATION SHEET (R-2 Exhibit)	Œ.		DATE <b>Fel</b>	February 1995	95
800GE <b>5 - E</b>	BUDGET ACTIVITY  5 - Engineering And Manufacturing Develor	evelopm	oment	PE NL	PE NUMBER AND TITLE 0604270A Elec	e number and title 0604270A Electronic Warfare Development	. Warfare	Develop	ment		
	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Est: 116	Coat to Complete	Total Cost
	Total Program Element (PE) Cost	83070	91914	66222	72379	4834	27457	18628	1888	Continuing	Continuing
01.12	DL12 Electronic Warfare Development:	42304	50862	14077	16972	16746	10220	10410	11971	Continuing	Continuing
DL15	DL15 Army Reprogramming and Analysis Team	0	3948	2965	3860	4477	3732	0		0	19122
DL16	DL16 TROJAN Development (TIARA)	0	0	345	1333	1410	1484	0	0	0	4772
DL18	DL18 High Value Asset Defense System	2838	1661	7696	10249	0	0	0	٥	0	25776
D611	D611 Tactical Decaption-Army Wide	1947	0	0	0	0	0	0	0	0	7201
D <b>88</b> 5	D885 A/C Surv Equip Dev	35981	32323	38917	39845	25711	12021	. 8218	11/29	0	200726
Ŀ											

infrared/optical battlefield surveillance systems and electronically fused munitions. Existing Army EW systems must be replaced or upgraded to maintain their capability in the face of threat technical advancements. This program element satisfies requirements for brigade, division, corps and higher commanders to conduct electronic warfare to meet tactical and Special Electronic Mission Aircraft (SEMA) requirements, attach/scout, and assault/cargo mission requirements. Signals Warfare Development provides (EW), signals warfare (SW), aircraft survivability equipment (ASE), battlefield deception, rapid software reprogramming and protection of personnel and equipment from for an integrated ground-based and hellebore Intelligence and Electronic Warfare Common Sensor (IEWCS) System. The High Value Asset System will provide effective A. Mission Description and Budget Item Justification. This program element encompasses engineering and manufacturing development for tactical electronic warfare provide the Army with the capability to degrade or deny hostile forces the effective use of their communications, countermortar/counterbattery radars, surveillance radars, configured into small aperture antenna arrays; search and acquisition capabilities for unattended signal collectors; and new digital intelligence collection, processing and dissemination technology. The projects in this PE are in the Engineering and Manufacturing Development phase of the acquisition strategy and are therefore correctly hostile artillery. EW encompasses the development of tactical EW equipment and systems mounted in both ground and air vehicles. The systems under this program applications in advanced threat signals processing and prototype software upgrades; high frequency (HF) algorithms for compact antenna array technology (CAT) protection of personnel and equipment from electronically fused munitions. TROJAN developments will complete Proof-of-Principle R&D for specific TROJAN placed in Budget Activity 5.

# Project DL12 - Electronic Warfare Development:

1. This project provides for Engineering and Manufacturing Development (E&MD) and testing of Intelligence and Electronic Warfare Common Sensor (IEWCS) Subsystems and Systems leading to Milestone III. The Subsystems are:

Page I of 24 Pages

Exhibit R-2

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1995 DATE

BUDGET ACTIVITY

# 5 - Engineering And Manufacturing Development

0604270A Electronic Warfare Development

PE NUMBER AND TITLE

- TACJAM-A consists of state-of-the-art modular and scalcable Electronic Support Measures (ESM) and Electronic Countenneasures (ECM) subsystems configured for use command and control (C') nets at critical points in the battle, provide electromagnetic overmatch of the threat C' spectrum inclusive of both conventional and modern a. The TACJAM-A will enhance the Division Commander's ability to outmaneuver and kill the enemy by isolating and suppressing enemy fire control and frequency hopping modulations, freeze the enemy in place by jamming C2, and eliminate enemy counterfire by locating High Value Targets (HVT's) for targeting on a variety of air and ground prime movers (tracked, wheeled and heliborne).
- o. The CHALS-X provides the targeting capability required to support the Division Commander's requirement to locate and kill the enemy by providing location of high value targets. Airborne systems mixed with ground based systems will be capable of precisely locating enemy weapon systems and units (regardless of whether the enemy uses conventional or modern radios) producing target locations sufficiently accurate for first round fire for effect by organic artillery.
  - communication (radar) battlefield threat emitters. While operating in a fully automatic mode it will enhance the Division Commander's ability to out maneuver and kill the enemy by specifically identifying HVTs such as enemy counter/mortar, counter/battery ground surveillance radars at critical points in the battle and will provide precise c. The CMES (Common Modular ELINT System) provides search, intercept, Direction Finding (DF), precision location and analysis of the primary nonemitter locations with targeting accuracy.
    - 2. This project also provides for the integration of Common Sensor subsystems into 3 Army Systems, for the development of platform unique items (i.e. antennas), and for the modification of standard Army vehicles to meet intelligence and electronic warfare requirements. The Army systems are:
- with an organic capability to listen to, precisely locate for hard-kill or order-of-battle resolution, or render ineffective through electronic attack, threat command and control exploiting or eliminating - at the Commander's discretion - the latest, most modern types of hostile modulations and transmission techniques at the key time and place on a. Ground Based Common Sensor-Light (GBCS-L). The GBCS-L provides support to the Commanders of Airborne, Air Assault, and Light Infantry Divisions specifically designed to ensure transportability, prime mover maintainability, and mobility equal to, or greater than, that of the supported divisions and regiments, while and fire control communications nets and identify and precisely locate threat countermortar and counterbattery ground surveillance radar emissions. The system is the battlefield GBCS-L is configured on High Mobility Multipurpose Wheeled Vehicle (HMMWV).
  - terrain, self-contained, fully integrated, 24-hour-a-day signals intelligence and electronic attack asset. The GBCS-H is configured on a derivative of the Bradley Fighting Armored Cavalry Regiments (ACR) the same capability as the above GBCS-L. The GBCS-H, however, is the Army's only on-the-move, on-the-ground, all weather, all b. Ground Based Common Sensor-Heavy (GBCS-H). The GBCS-H provides support to the Commanders of Armored and Mechanized Infantry Divisions and Vehicle, the Electronic Fighting Vehicle System (EFVS) which is being developed in concert with the Command and Control Vehicle (C<sup>2</sup>V).
    - direction finding, and jamming system and will be deployed to Army Divisions and ACR. Configured in a BLACKHAWK Helicopter (EH-60A), it provides the moving c. Advanced Quickfix (AQF). The AQF provides for a material change to the existing heliborne QUICKFIX communications intercept, collection, processing, platform necessary to provide for location accuracies sufficient for "steel on target" requirements, as well as for extension of radio Line of Sight (LOS) against target
      - 3. The United States Marine Corps is utilizing the same subsystems as the GBCS and configuring them in a Light Armored Vehicle as a part of the Mobile Electronic Warfare Support System (MEWSS) improvement program.
- 4 This project is joint with the National Security Agency's Defense Cryptologic Program (DCP), Program Element #030885G, which provides a portion of the funds required for the development of the precision location subsystem and system integration of GBCS-L and GBCS-H.

Page 2 of 24 Pages

Exhibit R-2

Item 69

009

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 1995
S v	8UDGET ACTIVITY  5 - Engineering And Manufacturing Development  0604270A Elec	⊌D गाराह । Electronic Warfare Development	
<u> </u>	<ul> <li>FY 1994 Accomplishments:</li> <li>Resumed TACJAM-A ECM E&amp;MD program to include System CDR (21344)</li> <li>Completed development of TACJAM-A ESM E&amp;MD subsystem (2080)</li> <li>Code and tested CHALS-X frequency hopper software (3440)</li> <li>Code and tested CHALS-X frequency hopper software (3440)</li> <li>Continued GBCS/AQF Integration effort to include conducting Special In-Process Review and Contractor Test (15440)</li> </ul>	nd Contractor Test (15440)	
£	<ul> <li>FY 1995 Planned Program:</li> <li>Conduct Low Rate Initial Production (LRIP) Special In-process Review (SIPR) (87)</li> <li>Continue TACJAM-A ECM Development (21618)</li> <li>Complete, integrate and test CHALS-X frequency hopper software (2995)</li> <li>Continue GBCS/AQF Integration effort (20900)</li> <li>Conduct Block I operational capabilities expansion for GBCS/AQF:         <ul> <li>Incorporate TACJAM-A ECM</li> <li>Incorporate CHALS-X frequency hopper software</li> <li>Improve Discorder</li> </ul> </li> </ul>	) (87) Additional Embedded Training Improve Disc Management capability	
	tasking messages VIII Airborne Corps and development test (O onstration (4000) ness Technology Trans	Add a maintenance log capability Sensor cross cucing capability CDT)and Limited User Test (LUT)on GBCS/AQF ifer Program (STTR) (1052)	
<u> </u>	<ul> <li>FY 1996 Planned Program:</li> <li>Conduct Milestone III (92)</li> <li>Continue TACJAM-A ECM Development (IPR) (241)</li> <li>Continue Block I improvements to include (7113):</li> </ul>		
• • •	<ul> <li>Maintenance/Operator Trainer</li> <li>Database leveling and content analysis capability</li> <li>Interface with TROJAN</li> <li>QUICKFIRE capability</li> <li>Incorporate appropriate TST projects, i.e.: Multipath Effects Reduction; Co-channel Interference Reduction Incorporate appropriate TST projects, i.e.: Multipath Effects Reduction; Co-channel Interference Reduction Incorporate appropriate TST projects, i.e.: Multipath Effects Reduction; Co-channel Interference Reduction Incorporate appropriate TST projects, i.e.: Multipath Effects Reduction; Co-channel Interference Reduction Incorporate appropriate TST projects, i.e.: Multipath Effects Reduction; Co-channel Interference Reduction</li> <li>High level software design and Initiate hardware development (4330)</li> </ul>	rence Reduction ) Exhibit R-2	
L	109		Item 69

#### February 1995 0604270A Electronic Warfare Development DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 5 - Engineering And Manufacturing Development Conduct OCDT and IOT&E on GBCS/AQF (85)

# FY 1997 Planned Program:

- Initiate Block II improvements by (16972)
- Incorporation of algorithms from TST projects:
- Special Mobile Communications, Automated Map Based Intelligence Support System
- Digital Data Communications, Code Division Multiple Access (CDMA) Collection
- Use results of TST projects with ability to contect against modern HF communications including collection of facsimile signals
- Automated processing and display of PROFORMA signals will be incorporated from the "Generic PROFORMA Processing and Display"
  - Continue improvements to training devices and embedded training capability.

ARAT project will develop, test and equip an Army wide infrastructure capable of rapid reprogramming electronic combat software embedded in offensive and defensive aircraft, aircraft survivability equipment; automated intelligence collection systems; and advanced threat sensors for air defense, artillery and missile applications. The Project DL15 - Army Reprogramming and Analysis Team (ARAT): Army Reprogramming and Analysis Team (ARAT) for Target Sensing Systems (TSS): The weapon systems. Systems supported by this project include but are not limited to: radar warning receiver and jammer sub-systems of attack, scout, utility and SEMA project focuses on advanced information management technologies to: automate the threat recognition process; evaluate the operational impact of threat changes on inventoried sensors; develop, test and evaluate software to counter the change; and to develop tactical loading devices for deploying or deployed forces.

# FY 1995 Planned Program:

- Establish testbed capability to evaluate tactical memory loading devices (600)
  - Conduct technical training on ARAT and threat databases (200)
- Initiate technical evaluation of threat analysis databases and database management tools (995)
- Complete connectivity of secure Wide Area Network (WAN) with all reprogramming centers/activities, and initiate DISNET connection (1520)
  - Investigate and develop flagging models for filtering threat emitter information (300)
    - Develop and maintain threat parameter libraries for regional threat systems (250)
- Small Business Innovation Research (SBIR)/Small Business Technology Transfer Program (STTR) (83)

# FY 1996 Planned Program:

- Test and evaluate off-the-shelf and developmental memory loading devices for aviation electronic combat (AEC) equipment (985)
  - Modify or develop as required database management tools for AEC equipment (800)
    - Initiate study on the feasibility of electronic broadcast reprogramming (400)
- Evaluate, procure hardware/software and develop measurement and signature intelligence (MASINT) on-line database access capability (500).
  - Maintain and improve/upgrade ARAT communications systems (300)

603

Page 4 of 24 Pages

Exhibit R-2

UNCLASSIFIED

#### February 1995 0604270A Electronic Warfare Development DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 5 - Engineering And Manufacturing Development BUDGET ACTIVIT

# FY 1997 Planned Program:

- Modify or develop database management tools for ADA, IEW, Fire Support and Armor TSS (1480)
- Test and evaluate off-the-shelf and developmental loading devices for ADA, IEW, Fire Support and Armor TSS (700).
  - Conduct a demonstration and validation of broadcast reprogramming (800)
    - Improve or modify ARAT flagging capability (500).
      - Maintain MASINT database on-line capability (500)

analysis and reporting systems. This program tests and evaluates new digital intelligence collection, processing and dissemination technology using the fielded TROJAN systems, prior to the acquisition of those technologies. The process that will enable us to win the battlefield information war is referred to as digitization. This capability will allow us to process and disseminate real-time intelligence data from various sources; it forms the intelligence needed to issue orders inside the threat decision cycle. communications to include voice, data, facsimile, and electronic reconnaissance support to U.S. forces throughout the world. Project TROJAN operations may be easily Project DL16 - Trojan Development: New start for Project TROJAN in FY 96. This project is Tactical Intelligence and Related Activities (TIARA) program. A key factor in modern warfare is the ability to collect, process, and use information about your adversary while preventing him from obtaining similar information. Project To that end, it is imperative the TROJAN system keep pace with Digitization initiatives in order to respond aggressively to the emerging intelligence communication tailored to fit military intelligence unit training schedules and surged during specific events to involve every aspect of the tactical intelligence collection, processing, TROJAN is a combined operational and readiness mission system which uses advanced networking technology to provide seamless rapid radio relay, secure

FY 1994 Planned Program: Project established FY 96.

FY 1995 Planned Program: Project established FY 96.

# FY 1996 Planned Program:

- Apply proof-of-principle for video compression/processing technologies to the TROJAN intelligence processing workstation (145)
- Perform proof-of-principle for specific TROJAN applications for non-standard modulations using digital signal processing technologies (400)

# FY 1997 Planned Program:

- Continue proof-of-principle efforts for specific TROJAN applications for non-standard modulations techniques using digital processing technologies (400)
- Proof-of-principle for video compression/processing technologies (353)
  - Develop specialized software for classified pre-processing (493)
- Develop enhanced signal processing algorithms for multiple antennas (87)

Page 5 of 24 Pages

Exhibit R-2

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 1995

DGET ACTIVITY

# 5 - Engineering And Manufacturing Development

PE NUMBER AND TITLE 0604270A Electronic Warfare Development

integrated Radio Frequency Countermeasure system which is designed to provide protection for personnel and other high value assets against proximity fuzzed munitions. external power source. There shall be three (3) configurations of the SHORTSTOP Electronic Protection System: a manpack system, a stand alone system, and a vehicle Project DL18 - High Value Asset Defense System: This is the continuation of the SHORTSTOP program which was initiated as a Quick Reaction Program (QRD) to a The SHORTSTOP Operational Requirements Document (ORD), approved Apr 94, calls for a system with a lightweight autonomous configuration which shall be quickly and easily deployed via vehicles or manpack. In order to maximize tactical utility, it further requires that the set be capable of operation from either a battery or suitable CENTCOM Statement of Need (SON) developed in the early part of Operation Desert Shield/Desert Storm. The SHORTSTOP Electronic Protection System is a fully mounted system. SHORTSTOP will be used by Infantry, Engineering, Armored, Field Artillery, and Intelligence units to enhance survivability. Initial Operational Capability (IOC) for the lightweight versions is FY 99.

# FY 1994 Accomplishments:

- Conducted a Milestone II (MS II) In-Process Review (IPR) (75)
- Completed upgrade of LPU units to a multiband configuration (555)
- Continued threat analysis for development of Electronic Counter Measure (ECM) (Achniques (358)
- Awarded a competitive Engineering and Manufacturing Development (EMD) contract for development of a lightweight militarized system (1850)

# FY 1995 Planned Program:

- Conduct testing of LPU units upgraded to a multiband configuration (257)
- Continue development of a lightweight militarized system (4554)
  - Continue threat analysis for development of ECM techniques (75)
- Small Business Innovation Research (SBIR)/Small Business Technology Transfer Program (STTR (105)

# FY 1996 Planned Program

- Complete fabrication of nine (9) prototypes (6598)
- Conduct Technical Test on nine (9) prototypes (925)
- Conduct IPR for approval to procure units for Initial Operational Test and Evaluation (IOTE) (175)

## FY 1997 Planned Program

- Award contract modification to procure twenty (20) additional units to support IOTE (75)
  - Fabricate and deliver twenty (20) units (8603)
- Conduct IOTE (1571)

Project D611 - Tactical Deception-Army Wide: Upgrade design of the Multispectral Close Combat Decoy (MCCD), prepare for the procurement of the Log Base Critical Node (LBCN) and for interface with Battlelab simulations.

Page 6 of 24 Pages

60

xhibit R-2

Item 69

RDT&E BUDGET ITEM JUSTIFICATION	JSTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604270A Electronic Warfare Development	ment

# FY 1994 Accomplishments:

- Completed Log Base Critical Node (LBCN) tech data package (200)
- Modified and upgraded Multispectral Close Combat Decoy (MCCD) design and heating system (500)
- Used MCCD IOTE data to create decoy algorithms in Battlelab simulation (150)
- Initiated and coordinated renovation program of decoys at New Cumberland Army Depot (114)
- Established Wide Area Network (WAN) secure connectivity between the threat analysis and reprogramming centers and conducted a proof of principle demonstration
- Implemented tested and provided operating procedures for a rapid reprogramming Bulletin Board System (BBS) (200)
  - Demonstrated the utility of message format standardization for transmitting technical reprogramming data (200)
- Developed threat parameter libraries for regional threat systems (283)

include new or upgraded systems to counter monopulse, millimeter wave, frequency agile, pulse doppler, and continuous wave radars; passive infrared missile seekers; and laser directed weapon systems. Continual adjustments are made to this program to meet the changing and evolutionary nature of technology and threat. This program has classification for production and fielding of ASE systems to address infrared, radar, laser, and optical/electro-optical directed air defense threats. Projects in development assault/cargo mission requirements. Equipment developed will increase combat effectiveness and potential for mission accomplishment by reducing or eliminating the Project D665 - Aircraft Survivability Equipment Development: Provides for the development and system integration of Aircraft Survivability Equipment (ASE) to ability of threat air defense systems to detect, hit, damage, or destroy Army aircraft. Developments respond to the approved requirements documents, test, and type joint service applications that are coordinated through the Joint Technical Coordinating Group for Aircraft Survivability (JTCG/AS), as well as NATO applications achieve survivability, reduce vulnerability, and enhance combat effectiveness required to fulfill Special Electronic Mission Aircraft (SEMA), attack/scout, and coordinated through OSD. This project also provides the technical base for electronic warfare equipment for Comanche and Special Operations Aircraft

# FY 1994 Accomplishments:

- Completed DEM/VAL of the Advanced Threat Infrared Countermeasure (ATIRCM) (9143)
  - Continued effectiveness evaluations (2751)
- Continued software support (441)
- Continued DEM/VAL of Infrared (IR) Expendables (3150)
- Completed DEM/VAL and initiated Engineering & Manufacturing Development (EMD) of the Advanced Threat Radar Jammer (ATRJ) (11464)
  - Continued EMD of the AN/APR-39A(XE-2) Radar Signal Detecting Sct (RSDS) (700)
- Completed EMD of AN/APR-48A Radar Frequency Interferometer (RFI) (606)
  - Continued integration efforts of ASE systems (492)
- Continued development of Passive IR features for reduction of aircraft signature in all IR bands relative to heat seeking missiles (3391)
  - Continued in-house program management administration (3843)

•

Page 7 of 24 Pages

RDT&E BUDGET ITEM JUSTIFICATION	FICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604270A Electronic Warfare Development	
<ul> <li>Initiate EMD of ATIRCM (7372)</li> <li>Complete DEM/VAL and initiate EMD of the IR Expendables (4350)</li> <li>Continue EMD of the ATRJ (13567)</li> <li>Continue development of Passive IR features for reduction of aircraft signature in all IR bands relative to heat seeking missiles (1586)</li> <li>Continue effectiveness evaluations (683)</li> <li>Continue software support (3)</li> <li>Continue integration efforts of ASE systems (337)</li> <li>Continue integration efforts of ASE systems (377)</li> <li>Complete EMD of the AN/APR-39A(XE-2) Radar Signal Detecting Set (RSDS) (50)</li> <li>Continue in-house and program management administration (3760)</li> <li>Small Business Innovation Research (SBIR)/Small Business Technology Transfer Program (STTR (615)</li> </ul>	es (4350) f aircraft signature in all IR bands relative to heat seeking missiles (1586) stecting Set (RSDS) (50) Technology Transfer Program (STTR (615)	
<ul> <li>FY 1996 Planned Program:</li> <li>Continue EMD of ATTRCM (16904)</li> <li>Continue EMD of the IR Expendables (1529)</li> <li>Continue EMD of the ATRJ (16401)</li> <li>Continue development of Passive IR features for reduction of aircraft signature.</li> <li>Continue effectiveness evaluations (406)</li> <li>Continue integration efforts of ASE systems (50)</li> <li>Continue software support (100)</li> <li>Continue in-house and program management administration (3241)</li> </ul>	saircraft signature in all IR bands relative to heat seeking missiles (1286)	
FY 1997 Planned Program:  Continue EMD of ATIRCM (17012)  Continue EMD of the IR Expendables (3030)  Continue development of Passive IR features for reduction of aircraft signature Continue effectiveness evaluations (536)  Continue integration efforts of ASE systems (50)  Continue software support (100)  Continue in-house and program management administration (3326)	Faircraft signature in all IR bands relative to heat seeking missiles (1302)	
Page	Page 8 of 24 Pages	Exhibit R-2

Item 69

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION	SHEET (R.	-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604270A Elec	TITLE Electronic	TITLE Electronic Warfare Development	elopment
B. Program Change Summary					
Premione Description of Dudges	FY 1994	FY 1995	FY 1996	FY 1997	
	62828	27168	62466	59194	
ropriated Value (Total PE)	-765	<b>\$</b> 1816			
a. SBIK/S1 I'K decrement (-1245)  b. Remogramming into DF (400)					
Budget	83070	91914	65222	72379	
	Page 9	Page 9 of 24 Pages			Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ient	PE NI 060	PE NUMBER AND TITLE  0604270A Electronic Warfare Development	ntle <b>lectronic</b>	: Warfare	Develop			PROJECT <b>DL 12</b>
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1906 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
LL12 Electronic Warfare Development:	42304	20862	14077	16972	16748	102201	10410	11971	Continuing	Continuing
C. Other Program Funding Summary										
	EV 1004	TV 1004	7001	2001	2	1			To ,	Total
OPA (SSN BZ7326)	0	\$ <b>4</b> 05	46937	46581	45243	47756	47475	5001 50364		
OPA (SSN BZ9752)	6299	10626	14884	12263	0	0	6704	6755		Contra
APA (SSN AB3000)	490	38889	38049	37188	39205	42201	51966	68099	Cont'd	Cont.d
RDTE Budget Activity 7	15492	15722	18949	19824	19324	19624	19724	20893	Cont'd	Cont'd
RDTE Budget Activity 7 DCP PE 030885G, CHALS-X	6030	5013	3038	2998	4165	5515	6049	6828	Cont'd	Cont'd
D. Schedule Profile	1007		Ę	<b>300</b>		Ī	<u> </u>			
	2 3	4	7 7	r i 1995 2	4	FY 1996	ۍ ۳	_	FY 1997	
Acquisition Milestones			1		•	•	•	•	n •	•
Award Contract for GBCS-L LPU			**							
Award Upgrade for AQF Engine			×		;					
Award Contract GBCS/AOF LRIP					* *					
Milestone III on GBCS/AQF					<		×			
			;							
Complete TACJAM-A ECM EM&D		*	• <b>.</b>							
Conduct Block I Improvements		<	*		<b>×</b>			>		
Conduct Block II Improvements			;		•			< ×		
T&E Milestones								ţ		
Conduct Block 0 OCDT			×							
Conduct LUT				×						
Conduct Block I OCDT on GBCS/AQF						×				
		P	Page 10 of 24 Pages	4 Pages				Exhibit R-2	2	
			809							Item 69

608 UNCLASSIFIED

RDT&E BUDGET ITEM JUSI		N JO	STIFI	SATIC	N S	<b>TIFICATION SHEET (R-2 Exhibit)</b>	(R-2	Exhi	DEC (				DATE	February 1995	1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Developr	ring D	evelo	pment			PE NUMBER AND TITLE  0604270A Electronic Warfare Development	AND TI	TLE ectro	nic X	/arfar	e Dev	igole	nent		PROJECT DL 12
		PY 199	994		1	FY 1993				FY 1996	966			FY 1997	
		7	٣	4	_	7		4	_	7	~	4	_	,	4
Conduct IOT&E on GBCS/AQF				•		ì	)	•		ı	×	•	•		•
Contract Milestones											:				
Conduct Special IPR on GBCS-L LPU				×											
Field RDT&E Models GBCS-L								×							
IOC for GBCS-L LPU								ļ				×			
*Denotes completed effort															

Page 11 of 24 Pages 609

Item 69

Exhibit R-2

RD.	RDT&E PROGRAM ELEMENT	RAM EL		PROJECT	SOST BE	REAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ng And Manı	Jacturing	Developme	<b>1</b>	PE NUMBER AND TITLE 0604270A Elec	AND TITLE	onic Warf	Sittle Electronic Warfare Development		E Q	PROJECT DL12
A. Proisst Cost Breakdown	reakdown			FV 1094		FV 1994	FV 100K	FV 1007			
Primary Hardware Development	Development			15655		20536	3716	6009			
Software Development	nent			11132		12673	2782	4270			
Systems Engineering	gu			1739		2010	438	672			
Integrated Logistics Support	s Support			3479		4019	875	1343			
Quality Assurance				1044		1206	262	403			
Reliability, Maintainability & Availability	inability & Avail	lability		1739		2009	437	671			
Developmental Test & Evaluation	st & Evaluation			1220		815	818	485			
Government Engineering Support	seering Support			3719		3823	2398	984			
Program Management Support	ent Support			625		645	630	628			•
Program Management Personnel	nent Personnel			1952		1864	1724	1515			
SIBR/STTR				0	_	1052	0	0			
Total				42304		50652	14077	16972			
B. Budget Acquisition History and Planning Information	ition History as	id Planning In	formation								
Performing Organizations	nizations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	**Project	*Total					i	
Performing Activity	or runding Vehicle	Ooligation Dafe	Activity	CHISE FAC	FY 1994	FV 1004	FV 1005	FV 1006	FV 1007	Budget to	Total Drogging
Product Development Organizations	ent Organizatio	20								Compical	I IOKI ATIII
Sanders/AEL	C-CPIF	JUN 89	198584	207027	164517	20566	19968	1976	0	0	207027
IBM/Loral	SS-CPFF	JUN 90	54259	57829	43535	2169	1919	0	0	0	47623
ESI	C-CPAF	SEPT 91	151595	)469	79330	10040	16394	2104	0	0	107868
FMC	SS-CPFF	SEPT 90	12104	13977	8192	2013	2172	1600	0	0	13977
Loral	SS-TBD	<b>MAR 95</b>			0	0	2000	0	0	0	2000
TBS	C-TBD	OCT 95			0	0	0	2830	13363	57732	74050
CECOM	MIPR					2418	2486	1559	640	Cont'd	Cont'd
Ft Monmouth NJ											
Misc						1301	1337	839	344	Cont'd	Cont'd
				Page	Page 12 of 24 Pages	es			Exhibit R-3	-3	

019

Item 69

RE	RDT&E PROGRAM ELEME	GRAM E	LEMENT/	NT/PROJECT COST BREAKDOWN (R-3)	T COST	BREAK	DOWN (F	7-3)	DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Developr	And Manu	facturing [	Development	<u>_</u>	PE NUMBER 060427	PE NUMBER AND TITLE 0604270A Electro	PE NUMBER AND TITLE 0604270A Electronic Warfare Development	are Devek		ă O	PROJECT DL12
Contractor or	Contract		3.6								
ng ng	Meulou 1 ype or Funding	Award of Obligation	remormung Activity	Office	* 1 otal Prior to					Budget to	*Total
Activity	Vehicle		EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Vitro FFP OCT	utent Organiza FFP	OCT 95				625	645	630	625	Cont'd	Cont.d
In-House	Direct					1952	1864	1724	1515	Cont'd	Cont'd
Test and Evaluation Organizations	Organizations						7501				
In-House MIPR Covernment Furnished Property None	MIPR hed Property	Z.				1220	815	815	485	Cont'd	Cont'd
Subtotal Product Development	elopment				295574	38507	46276	10908	14347	57732	463412
Subtotal Support and Management	Management				0	2577	3561	2354	2140	0	10632
Subtotal Test and Evaluation	luation				0	1220	815	815	485	0	3335
Total Project					295574	42304	50652	14077	16972	57732	477379

<sup>\*</sup>Total Program includes funding from other sources.
\*\*Project Office EAC includes Marine Corps and National Security Agency funds which are not included in the Total Program (Army budget).

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	IFICATI	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	395
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Jevelopn	lent	PE NE 000	PE NUMBER AND TITLE 0604270A Elect	TITLE Electronic Warfare Development	Warfare	Develor			PROJECT <b>DL15</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
OL15 Army Reprogramming and Analysis Team	0	3948	2865	3880	1744	3732	0	0	0	19122
C. Other Program Funding Summary: There are no other related RDTE efforts	no other rel	ated RDTE	efforts.							
D. Schedule Profile:	i		•							
	FY 1994 2	4	- E ~	FY 1995 2 3	1	FY 19%	% ~	-	FY 1997	•
Establish a testbed capability to evaluate	, 1		-	n	· ×	4	<b>*</b>	<b>-</b>	۲ ۲	₫
memory loading devices										
Initiate technical evaluation of database					×					
induagement tools					ì					
Complete connectivity of secure WAIN					×					
Test and evaluate off-the-shelf and						>				
developmental loading devices for						•				
aviation combat equipment										
Modify or develop database management							×			
tools for aviation combat equipment							;			
limitate study on the reasonity of electronic broadcast reprogramming							×			
Modify or develop database management									<b>×</b>	
tools for air defense and other non-									<b>4</b>	
aviation electronic combat systems										
Test and evaluate off-the-shelf and									×	
developmental loading devices for non-										
aviation electronic combat systems										
Conduct a demonstration/validation of										×
oroaucasi reprogramming										
		F	Page 14 of 24 Pages	4 Pages				Exhibit R-2	8	

612

RDT&E PROGRAM ELEMENT	GRAM EL	EMENT/PR	PROJECT C	OST BF	EAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ınufacturing	Developmer	14	PE NUMBER AND TITLE 0604270A Elect	AND TITLE	onic Warf	TITLE Electronic Warfare Development		a 0	PROJECT <b>DL15</b>
A. Project Cost Breakdown			7001.72	Ì						
Government Engineering Support	E		r r 1994	<u>.</u>	276 276	FY 1996 275	FY 1997	~! ~		
Contract Engineering Support				•	2252	2000	2400			
Software Development Edutoment Acquisition	ı Acquisinon				0 <b>4</b> 0	0 6	29 29 29 29	_		
Systems Engineering					8 8	0 0	9 9 1 8 1 8			
Training Development PM Support					270	0,00	100			
PM Management Personnel					300 167	95 95 95	<u> </u>			,
SBIR/STTR   Developmental Test and Evaluation	ion				83	00	0 5			
Total				•	3948	2985	3980			
B. Budget Acquisition History and Planning Information	and Planning In	<u>formation</u>					•			
Performing Organizations										
Contractor or Contract										<u> </u>
_	pe Award or	Performing	Project	Total						
gu.		Activity	Office	Prior to	i	i			Budget to	Total
Product Development Organizations	<u>Date</u> rtions	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 19%	FY 1997	Complete	Program
ILEX FFP	1095	6162	6162	C	0	1162	50	1200	2800	6160
CECOM MIPR	1095			0	0	1056	525	069	1500	3771
Various	•			0	<b>0</b>	1140	1000	1300	2200	5640
Support and Management Organizations	anizations			•	•	•	•	;		
Various				<b>-</b>	<b>D</b>	340	00 °	200	950	2090
Test and Evaluation Organizations	ions			>	>	067	3	<u>8</u>	459	1059
TBS	1097			0	0	0	0	100	300	400
Government Furnished Property None.	ty None.									<del></del>
			Page 1.	Page 15 of 24 Pages	<b>ડ</b>			Exhibit R-3	ę	
				613						Item 69

RDT&E PROGRAM ELEMENT/PROJECT	T COST BREAKDOWN (R-3)	AKDO	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604270A Elect	ND TITLE	nic Warf	אוזונב Electronic Warfare Development			PROJECT DL15
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1994	FY 1994	590 3358 590 3948	EY 1996 2525 460 2985	FY 1997 3190 690 100 3980	Budget to <u>Complete</u> 6500 1409 300 8209	Total Program 15573 3149 400 19122
P.	Page 16 of 24 Pages				Exhibit R-3	7-3	
	***						Item 60

Item 69

								1		
RDIGE BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit	<b>∵</b>		Pel Fel	February 1995	96
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060	PE NUMBER AND TITLE 0604270A Elect	TITLE Electronic Warfare Development	. Warfare	Develop			PROJECT DL16
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL16 TROJAN Development (TIARA)	0	0	\$5	1333	1410	1484	0	0	0	4772
C. Other Program Funding Summary OPA BA0326	EY 1994 11602	EY 1995 22159	EY 1996 19313	EY 1997 3707	FY 1998 4066	FY 1999 4425	FY 2000 4872	FY 2001 5071	Compl Cont'd	Total Cost Cont'd
D. Schedule Profile	FY 1994	•	Ε -	FY 1995	•	FY 1996			Y 199	<u> </u>
Acquisition Milestones Contract Awd for Video Compression/Processing Contract Awd for Non- Standard Mod using Digital Contract Awd for Spec Software Contract Awd for Sig Proc Algorithms Engineering Milestones Prototype Insertion	•		-		- •	· × ×	<del>d</del>	<b>-</b>	~ ××	<b>→</b> ×
		4	Page 17 of 24 Pages	Раче				Exhibit R-2	~	
			615							Item 69

RD	RDT&E PROGRAM ELEMENT	RAM ELE	EMENT/PR	PROJECT COST BREAKDOWN (R-3)	SOST BE	REAKDO	WN (R-3		DATE	February 1995	y oo
BUDGET ACTIVITY 5 - Engineeri	<sub>BUDGET ACTIVITY</sub> 5 - Engineering And Manufacturing Developi	rfacturing l	Development	ţ	PE NUMBER AND TITLE 0604270A Elect	AND TITLE	TITLE Electronic Warfare Development	are Develo			PROJECT DL 16
A. Project Cost Breakdown	Breakdown										
Hardware Development Software Development Prototype Insertion Total	pment ment n			FY 1994		FY 1995	FY 1996 326 219	FY 1997 765 493 75	<b>718 % %</b> -		
B. Budget Acqui	B. Budzet Acquisition History and Planning Information	d Planning Inf	<b>Cormation</b>				Ç	133	2		
Performing Organizations  Contractor or Contract  Government Method/Type Award or Performing or Funding Obligation  Activity Vehicle Date  Product Development Organizations: N/A  Support and Management Organizations: N/A  Test and Evaluation Organizations:	Contract Contract Method/Type or Funding Vehicle ment Organizations ion Organizations	Award or Obligation Date nns: N/A zations: N/A	Performing Activity <u>EAC</u>	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Misc C/CPFF Jan MIPR Jan Government Furnished Property None.	C/CPFF MIPR nished Property N	Jan 97 Jan 98 None.	545 1333	545 1333	0	0	0	545	0 1333	0 2894	545
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Development ind Management Evaluation				0 0	0 0	0 0	545 545	1333	0 2894	4772
				Page 1.	Page 18 of 24 Pages	69			n jid K. S.	9	, <del>, , , , , , , , , , , , , , , , , , </del>

Item 69

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATION	SN SHE	ET (R-2	Exhibit			DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NI	PE NUMBER AND TITLE 0604270A Elect	TITLE Electronic Warfare Development	Warfare	Develop	ment	- C	PROJECT <b>DL18</b>
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
DL18 High Value Asset Defense System	2836	1984	7696	10249	0	0	0	0	0	25776
C. Other Program Funding Summary: Other Procurement, Army Budget Activity 2 SSN: VA8000 SHORTSTOP		FY 1995	FY 1996	FY 1997	FY 1998 13454	FY 1999 13418	FY 2000 14516	FY 2001 14518	To <u>Compl</u> Continue	Total Cost Continue
D. Schedule Profile	FY 1994 2 3	4	1 2	FY 1995 2 3	4	FY 1996 2 3	36 4		FY 1997 2 3	4
Approve ORD for lightweight system Conduct MS II IPR Award a competitive EMD contract Conduct PDR Conduct CDR Begin fabrication of prototypes Conduct contractor qualification testing Deliver EMD prototypes Conduct Technical Test of nine (9) prototypes Conduct IPR to procure additional units Award Contract for IOT&E Units Deliver IOT&E Units Complete IOT&E	**	*	<b>*</b>	××	×	×	***	×	×	*
			Page 19 of 24 Pages	24 Pages				Exhibit R-2	5	
			617	,						Item 69

RDT	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PRO.	PROJECT C	OST BR	EAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	y And Manu	facturing E	Jevelopment		PE NUMBER AND TITLE 0604270A Elec	AND TITLE	onic Warf	TITLE Electronic Warfare Development			PROJECT <b>DL18</b>
A. Project Cost Breakdown	eakdown			FY 1994	È	FY 1995	FY 1996	FY 1997			
Primary Hardware Development Development Test and Evaluation	evelopment nd Evaluation			1595		3973 257	5711 925	6940			
Operational Test and Evaluation Government Engineering Support Program Management Support	1 Evaluation ering Support nt Support			599 304		308 348 104	501 561	1571 907 831			
Total				2838		4991	8692	10249	_		· • •
B. Budget Acquisition History and Planning Infort ation	ion History and	d Planning Inf	orr ation								
Performing Organizations	zations										
Contractor or Government	Contract Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Whitaker Elect C/CPIF	C/CPIF	<b>us</b> Jul 94	10942	10942	0	1300	3931	5711		0	10942
Whittaker Elect	SS/CPIF	Nov 96							6940	0	6940
CECOM	MIPR PWD					599 205	308	201	907	0	2315
Support and Management Organizations	gement Organia	zations					!				
Misc	PWD/MTPR					304	105	133	631	<b>-</b>	105
Test and Evaluation Organizations	n Organizations	•				\$	5	2	100	>	**07
TECOM	MIPR					138		009	1246	0	1984
	MIPR					202	257	325	325		1109
Government Furnished Property: None	shed Property:	None									
Subtotal Product Development	velopment					2194	4281	6212	7847		20534
Subtotal Support and Management	1 Management					304	453	561	831		2149
Subtotal Test and Evaluation	valuation					340	257	925	1571		3093
Total Project						2838	4991	2698	10249		25776
				Раде	Page 20 of 24 Pages	es			Exhibit R-3	2-3	
					<b>{</b>						1,000 60

Item 69

#### UNCLASSIFIF

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TSUC M	IFICATI	ON SHE	ET (R-2	Exhibit	(1)		DATE Fe	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604270A Elect	ΣΤΙΤΙΕ Electronic Warfare Development	: Warfare	Develop			PROJECT <b>D611</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D611 Tectical Deception-Army Wide	1947	0	0	0	c	0	0	0	0	1947
C. Other Program Funding Summary: None										
D. Schedule Profile	FV 1994	_	Įz.	Y 1995		FY 19%	8		FY 1997	
Complete LBCN tech data package X	2 3	4	1 2	2 3	4	2	ξ. 4	-	2 3	4
			Page 21 of 24 Pages	24 Pages				Exhibit R-2	-2	•

RDT&E PROGRAM ELEMENT/PROJ	JECT CO	/PROJECT COST BREAKDOWN (R-3)	<b>JOWN (R-3)</b>		DATE February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	9 O	PE NUMBER AND TITLE 0604270A Elec	TITLE Electronic Warfare Development	re Develop		PROJECT D611
A. Project Cost Breakdown  Miscellancous  Development Test and Evaluation Operational Test and Evaluation Contractor Engineering Support Government Engineering Support Travel	FY 1994 25 300 200 406 992 24 1947	FY 1995	FY 1996	FY 1997		
B. Program Change Summary: Not applicable	Dage 77	Page 22 of 24 Pages			ር ር ፲፱ ፲፱	
		620				Item 69

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit	=		DATE <b>Fe</b>	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develor	Developm	pment	PE NU	PE NUMBER AND TITLE 0604270A Elec	itle <b>lectroni</b> c	TITLE Electronic Warfare Development	Develor		R O	PROJECT <b>D665</b>
COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Eathmate	FY 1907 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D865 A/C Surv Equip Dev	35981	32323	39917	39845	25711	12021	8218	6710	0	200726
C. Other Program Funding Summary									Ę	Total
APA BA 4	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
AZ3504 ASE	28005	44270	22304	0	25023	68726	60719	60714	Cont'd	Cont'd
AA0720 ASE Modifications	2490	8114	4215	5454	4915	3101	2986	9953	Cont'd	Cont'd
D. Schedule Profile	Y 199		įr,	Y 1995		FY 1996	*		FY 1997	
Continue development of Passive IR	2	4	- - -	2 ×	4	7	3 4	-	2 3	4
Features		;								
Initiate EMD contract of ATRU Continue EMD contract of ATRU		*	×							
Complete DEM/VAL of ATTRCM		×								
Initiate EMD contract of ATIRCM Complete DEM/VAL of IR Expendables			<b>×</b>		×					
Continue EMD contract of ATTRCM			•			×				
Initiate EMD of IR Expendables				×						
*Denotes completed effort										
										-
		•	Page 13 of 14 Pages	4 Danas				1. A. H.	c	
			uke 40 01 4	r a ures					4	

RDT&E PROGRAM ELEMENT/PROJECT	T/PROJECT COST BREAKDOWN (R-3)	OWN (R-3)	DATE	February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604270A Elec	tronic Warfa	PENUMBER AND TITLE O604270A Electronic Warfare Development	PROJECT <b>D665</b>
viect Cost Breakdown  Contracts  and Evaluation  actor Engineering Support  nment Engineering Support  am Management Support/Matrix Support  8 STTR	되	EY 1996 31928 684 995 838 5472	FY 1997 30407 1499 1290 623 6026	
B. Budget Acquisition History and Planning Information: - Not applicable (does not meet reporting criteria).	does not meet reporting o	syst ( criteria).	6466	
Page	Page 24 of 24 Pages		Exhibit R-3	R-3

622

Item 69

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	MENT/F	ROJEC	COS.	T BREA	KDOW	I (R-3)		DATE FeI	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develor	Jevelopm	pment	PE NI 060	PE NUMBER AND TITLE 0604315A Tri S	E NUMBER AND TITLE DE04315A Tri Service Standoff Attack Missile	e Stando	off Attack	Missile		PROJECT <b>DF08</b>
COST (In Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
DF08 Tri Service Standoff Attack Missile	38330	19421	0	0	0	0	0	0	0	839074

directed for the development of a large cruise missile to meet the requirements of all three services. The program objective was to develop a family of affordable, highly A. Mission Description and Budget Item Justification: TSSAM was a joint program with the Air Force as the executive service. The program was congressionally survivable, conventional, stealthy cruise missiles which would satisfy tri-service requirements to affectively engage a variety of high-value and sea targets.

direction, and with limited funding, the Army (with OSD concurrence) has begun an orderly termination at minimum expense. The U.S. Air Force Joint Systems Program development. The Army issued Termination for Convenience to the integration contractor, Loral Vought Systems Corporation, Dallas, TX and support contractor CAS, Inc., Huntsville, AL. The Army Acquisition Executive approved the Army TSSAM termination plan on 13 May 94. Receipt date of Termination Proposals from both The FY94 Authorization and Appropriation Congressional Language directed the Army to terminate its participation in the TSSAM program. Based on this contractors is FY 95 (third quarter). This project supports research efforts in engineering and manufacturing development phases of the acquisition strategy and is Office issued a partial Termination for Convenience contract modification to Northrop Aircraft Division on 25 Feb 94 for the Army's portion of the Tri-Service therefore correctly placed in Budget Activity 5.

## FY 1994 Accomplishments

- Funded EMD Activities through Jan 94 (5941)
- Began Withdrawal/Termination Activities (24191)
- Supported PEO Tactical Missile Mission (8198)

# FY 1995 Planned Program

- Negotiate Withdrawal/Termination Contracts (10441)
- Complete other Withdrawal/Termination Activities (494)
  - Support PEO Tactical Missiles Mission (8100)
    - SBIR/STTR (386)

FY 1996 Planned Program: No Planned Program

FY 1997 Planned Program: No Planned Program.

Page I of 4 Pages

Exhibit R-3

Item 70

623

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	EMENT/PR	OJECT C	OST BRE	AKDOWN	(R-3)	DATE February 1995	1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Development		PE NUMBER AND TITLE 0604315A Tri S	Tri Service	DE04315A Tri Service Standoff Attack Missile	ick Missile	
B. Program Change Summary		FY 1994	FV 1995	FY 1996	FV 1997		
Previous President's Budget		43182	82458	0	0		<del>-</del>
Adjustments to Appropriated Value		43182	19471				
A. SDINGS I IN Occionatin (-033)     B. Reprogrammed out of PE (-4199)     Current Budget Submit/President's Budget		38330	19421	0	0		
C. Other Program Funding Summary: N/A							
D. Schedule Profile	FV 1994		FV 1004		FV 100K	FV 1997	
Begin Withdrawal/Termination Contracts Support PEO Tactical Missiles Mission Begin Other Termination Activities Negotiate/Complete Termination Complete Other Termination Activities	e ×	- ×	2	<b>-</b> ××	e .	<b>4</b>	•
		Page	Page 2 of 4 Pages			Exhibit R-3	
							02 meil

624

Item 70

RDT8	RDT&E PROGRAM ELEMENT	RAM ELE		/PROJECT COST BREAKDOWN (R-3)	SOST BE	REAKDO	WN (R-3		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	And Manu	facturing D	evelopment	<b>ب</b> د	PE NUMBER AND TITLE 0604315A Tri S	AND TITLE	rvice Stan	PENUMBER AND TITLE O604315A Tri Service Standoff Attack Missile	k Missile	, C	PROJECT <b>DF08</b>
A. Project Cost Breakdown	akdown			7007		1005	1000	EV 1007			
Contractor Engineering Support Program Management Personnel Support Test & Evaluation/Other (GFE/OGA's)	ng Support t Personnel Sup her (GFE/OGA	port 's)		24191 24191 8198 5941		10827 8100 494	F1 1990	11 133			
Total				38330		19421					
B. Budget Acquisition Bistory and Planning Information	on History and	Planning Info	ormation								
Organiz	ations										
Government	Contract Method/Type	Award or	Performing	Project	Total						
	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity   Vehicle     Product Development Organizations	Vehicle of Organization	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
NORTHROP	C/FPIF	APR 86	N/A	N/A	518487	21113	10619				550219
ARCRAFT DIV	ardo/33	70 020	10803	00000	00337	1,600					
	33/02/66	35.F 80	10649	97900	60000	9861					/01/0
CAS, INC.	SS/CPFF	DEC 86	N/A	N/A	16341	1210					17551
RACTS	N/A	X/A	X	Z	11662	270	208				12140
Aanag	ement Organiz	ations									
IN-HOUSE	8	<u>وح</u> ا	Y/Z	N/A	46301	7399	7403				61103
A'S	&	OCT	<b>Y</b> /X	Y/X	8711	795	701				10207
Test and Evaluation Organizations	Organizations										
	2	OCT	N/A	N/A	39825	4809	494				45128
	8	OCT	N/A	N/A	12787	1132					13919
				Ö	Dece 2 of 4 Deces				0 2 2 2 3 0	G	
					625				11		Item 70
					•						

RDT&E PROGRAM ELEMENT	GRAM EL	EMENT/PROJECT	COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1998	29.
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Inufacturing	Development	PE NUMBER AND TITLE 0604315A Tri S	SAND TITLE	Tri Service Standoff Attack Missile	doff Attac	ck Missile		PROJECT DF08
Government Furnished Property Contract	ty.								
	8.	: (	Total						
Description Vehicle	S Colligation	Delivery	Prior to	700		ì		Budget to	Total
velopmen		<u>जबाद</u>	r 1 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
NOT. THROP SS/CPAF	10 NOI	N/A	61700						61700
SS/CPFF	;								
Support and Management Property: None Test and Evaluation Property: None	perty: None None								
			Total						
			FY 1994	FY 1994	FY 1995	FY 19%	FY 1997	Budget to	Total
Subtotal Product Development	1		673699	24191	10827				708717
Subtotal Test and Evaluation	<b>11</b>		\$5012 \$2612	8198	8100 49.4				71310
Total Project			781323	38330	19421				839074
									<del></del>
		Pa	Page 4 of 4 Pages	64			Exhibit R-3	5	
								ļ	

979

Item 70

RDT&E BUDGET ITEM JUSTIFIC	JUSTIFIC/	ATION SI	CATION SHEET (R-2 Exhibit)	2 Exhibit				DATE Fet	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604321A All S	DE04321A All Source Analysis System (TIARA)	) Analysi	s Systen	1 (TIARA)		
COST (in Thousends)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	8417	42049	52696	37428	24942	27363	23781	33422	Continuing Continuing	Continuing
DB19 ASAS Evolutionary Acquisition	8417	39064	51205	35438	21559	26865	23781	33422	Continuing	Continuing
D2FT ASAS Operational Test	0	2965	1483	1990	3383	498	0	0	0	8

A. Mission Description and Budget Item Justification. This program element, All Source Analysis System, funds the All Source Analysis System (ASAS) Evolutionary functional area of the Army Command and Control System (ACCS). It is a tactically deployable ADP system designed to support management of IEW operations and target development and armored cavalry regiment (ACR), separate brigade, division, corps, and echelons above corps (EAC). The projects in this program element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in budget activity 5. Acquisition (EA) system as well as the operational testing for the ASAS. ASAS is the automated support system for the intelligence and electronic warfare (IEW)

ASAS system provides automated support to the combat commander in the areas of intelligence and collection management, all-source target and situation analysis, single deliveries and continuous user test and evaluation opportunities. This strategy provides early user capabilities and streamlines acquisition. Building upon experience and Evolutionary Acquisition, within the Intelligence Fusion Project Office. The successful execution of military operations requires a flexible and modular intelligence and and multi-source processing, intelligence reporting, electronic warfare, and operational security as well as automation support to battlefield commander's command and control. The ASAS Block II development program will build upon and expand the capabilities and functionalities developed and produced in the ASAS Block I System The Army's intent is to keep fielded ASAS technology as current as possible by initiating value engineering/technology insertion to position the ASAS Block I Tactical targeting system that will provide tactical commanders a common view of the battlefield and a means for gaining a timely and comprehensive understanding of enemy force deployments, capabilities, and potential courses of action. The ASAS is a ground based, mobile, command and control, and intelligence processing system. The feedback gained from the fielded ASAS and other tactical fusion prototypes, ASAS Block II will undergo a Defense Acquisition (DAB) Milestone III review in FY 99 supportability. ASAS Block II strategy maximizes the use of Government Furnished Equipment (GFE), government and commercial Non-Developmental Item (NDI) inserting them into the fielded ASAS. Twenty-eight ASAS Block II systems will be fielded to Army active and reserve armored cavalry regiments, separate brigades, software, reuse of proven Office of Secretary of Defense (OSD) and ACCS Command, Control, Communications and Intelligence (C3I) software, multiple prototype including conversion to the Army Command and Control System (ACCS) Common Hardware/Software Open architecture. Additional software capabilities include Project DB19 - ASAS Evolutionary Acquisition: This project funds the development of the Army's only tactical intelligence fusion project, the ASAS Block II Operation Center Support Element (TSE) to receive ASAS Block II products, and by packaging some of the ASAS Block II advances into capability packages and enhanced intelligence and command and control functionality, jump and degraded mode operations, enhanced communications, and improved reliability and divisions, corps, and echelons-above corps.

Page 1 of 8 Pages

Exhibit R-2

AM ELEMENT/PROJECT COST BREAKDOWN (R-3) DATE February 1995	PE NUMBER AND TITLE	cturing Development 0604321A Ali Source Analysis System (TIARA)
T&E PROGRAM ELEME	BUDGET ACTIVITY	5 - Engineering And Manufacturing Development

# FY 1994 Program Accomplishments:

- Continued SSP-S Effort (3481)
- Provided ATCCS III Testing Support (3965) Continued Joint Prototyping (971)

# FY 1995 Planned Program:

- Continue Block II Engineering & Manufacturing Development (EMD) (32880)
  - Provide GFE to Block Il Contractor (1567)
- Conduct Development/Operational/Assessment Testing (3871)
- Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (756)

# FY 1996 Planned Program:

- Continue ASAS Block II Evolutionary E&MD Capability Packages (38990)
  - -Develop/integrate ASAS Common Applications
    - ·Host Collection Management Support Tools
- -Incorporate ASAS-Single Source (ASAS-SS) Security Features
  - Conduct Development/Operational/Assessment Testing (5343)
- Procure and provide GFE for Product Development & Test (6872)

# FY 1997 Planned Program:

- Continue ASAS Block II Evolutionary Acquisition E&MD Capability Packages (31866)
  - -Implement CASS-Compliant System Services and Common Applications
    - -Complete Unified Database Schema
- -Delivery of CHS VI HCUs for 6 workstations and 1 Communications Support Processor
  - -Develop Operational Diagnostic Capability
- Conduct Development/Operational/Assessment Testing (3572)

Operational Test and Evaluation Command (OPTEC). ASAS is an A quisition Category (ACAT) I system with several dedicated iterations of Initial Operational Test and those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of Evaluation (IOTE) / Operational Assessments (OA) between FY 95 and FY 99. Operational testing/assessment is conducted under conditions, as close as possible, to Project D2FT - ASAS Operational Test: This project finances the direct costs of planning and conducting operational testing and evaluation of the ASAS by the effectiveness and suitability of the system. Project D2FT is restructured from PE 0605712A, Support of Operational Testing, and is not a new start.

Page 2 of 8 Pages

Exhibit R-3

Item 71

628

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	HEET (R-2	Exhibit)		DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604321A AII S	LE Source A	ोगाट All Source Analysis System (TIARA)	n (TIARA)
<ul> <li>FV 1995 Planned Program:</li> <li>Plan and prepare for ASAS Block II operational testing (2646)</li> <li>Plan and prepare for ASAS Block II operational testing evaluation (247)</li> <li>SBIR/STTR (62)</li> </ul>				
<ul> <li>FY 96 Planned Program:</li> <li>Conduct ASAS Block II IOTE/Operational Assessment Testing (593)</li> <li>Conduct ASAS Block II IOTE/Operational Assessment Evaluation (500)</li> <li>Provide Player unit support of IOTE (400)</li> </ul>				
FY 97 Planned Program:  Conduct ASAS Limited User Test (LUT) testing (1395)  Conduct ASAS LUT Evaluation (397)  Provide Player unit support of LUT (198)				
B. Program Change Summary	FV 1004	FV 1996	FV 1997	
Previous President's Budget  Appropriated Value  Adjustments to Appropriated Value  a. SBIR/STRR decrement (-19)	42891	\$6978	46421	
b. HQDA reprogramming (3965) Current President's Budget Current President's Budget	42049	52698	37428	
Cnange Summary Explanation:  DB19: Funding: FY94 (+3M) funding added for operational testing of ASAS. Funds were realigned to OPA to allow for fielding of ASAS-Extended, FY 96 (-5.5M) and FY 97 (-4.9M). FY 97 (-6.M) realigned for higher priorities.  Schedule: None Technical: None	nds were realigned.	i to OPA to all	ow for fielding of A	SAS-Extended, FY 96 (-5.5M)
D2FT: Funding: Additional funding provided in FY 96 (1.5M) and FY 97 (2M) for Operational Testing of ASAS. Schedule: None Technical: None	or Operational Tes	ting of ASAS.		

Page 3 of 8 Pages 629

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE <b>Fe</b> l	February 1995	995
BUDGET ACTIV TY 5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NU 060	PE NUMBER ANC TITLE O604321A AII S	ITLE	TITLE All Source Analysis System (TIARA)	s System	TIARA)		PROJECT DB19
COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Coet
DB19 ASAS Evolutionary Acquisition	417	38084	51206	35438	21559	26865	23781	33422	Continuing	Continuing
C. Other Program Funding Summary OPA (K28801) ASAS Modules Spares (BA9704/MS9704)	EY 1994 33933 4825	EY 1995 23410 0	EY 1996 9886 100	EY 1997 7891 0	EY 1998 9052 0	EY 1999 34773	EY 2000 64925 2089	EY 2001 74777 6266	Complete Control	Total Cost Cont
D. Schedule Profile	FY 1994		Įs.	FY 1995		FY 19%	*		FY 1997	
BL RDTE Contract Award X*BL I IOTE II Phase 2 (TSE Functionality) Prototype	<b>7</b>	* *	7	m	4	~ ×	w <b>∡</b>	-	2 3	*
Delivery Phase 3 (EAC Functionality) Prototype							×			
Delivery Preliminary Design Review Critical Design Review							×		×	
			Page 4 of 8 Pages	Pages				Exhibit R-2	2	
			*							1.5

Item 71

TOR	ROTRE PROGRAM ELEMEN	RAM FIE	MENT/PRC	LIECT C	OST BR	FAKDO	T/PRO JECT COST BREAKDOWN (R-3)		DATE	40	
VENUE OF FROMING					or own in ac	J. E. S.				rebidary 1993	50
5 - Engineering And Manufacturing Development	g And Manu	facturing [	Jevelopment		0604321A All S	A All So	urce Anal	0604321A All Source Analysis System (TIARA)	m (TIAR		DB19
A. Project Cost Breakdown	eakdown					•	) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	, i			
Systems Development	ŧ			FY 1994 3846	ΓΥ 25	29798 29798	FY 1996 35162	FY 1997 29044			
SETA				275		1786	1402	1034			
Project Management				331		1126	1326	1003			
Matrix Management	•			0		926	1100	785			
Test				3965	**1	3871	5343	3572			
GFE				0	Ţ	1587	6872	0			
Total •SBIR/STTR (756)				8417	<b>£</b>	*39094	\$1205	35438			
B. Budget Acquisition History and Planning Information	tion History and	d Planning Inf	ormation								
Performing Organizations	izations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Freduct Development Organizations	CD C OF SALIZATION			2000			0000	07.00	*******	Ċ	(
Martin Manetta	CPA	ر در م	1100/9	6/9011	57671	1/6	26/67	32162	29044		
Electronic	CPFF	Sep 94	2555	2555	0	2555					2555
Warfare Assoc		•									
(SSP-S)											
Sterling SW (SSP-S)	T&M	May 94	320	320		320					320
Support and Management Organizations	gement Organiz	zations									
SYTEX	CPFF	Oct 93	TBD	TBD	0	275	1786	1402	1034	Cont	Cont
ASAS In-House					0	331	1126	1326	1003	Cont	Cont
Matrix CECOM					0	0	976	1100	785	Cont	Cont
Test and Evaluation Organizations	n Organizations	•									
OPTEC					0	3965	0	0	0	0	3968
MMC					0	0	3871	5343	3572	Cont	Cont
				Page	Page 5 of 8 Pages	S			Exhibit R-3	<b>?-3</b>	
					100						Item 71

RDT&E PROGRAM ELEMENT	SRAM EL	EMENT/PROJECT	T COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ufacturing	Development	PE NUMBER 060432	PE NUMBER AND TITLE 0604321A All So	DE04321A All Source Analysis System (TIARA)	sis Syste	m (TIAR	2	
Government Furnished Property Contract Method/Type Item Or Funding		Delivery	Total Prior to					Budget to	Total
velopmen	X X	TBD TBD	0	0	1587	1100	FY 1997	Complete	Program 2687
Support and Management Property: None Test and Evaluation Property  Test sets (MMC) CPAF Oct 93	rty: None Oct 93		0	0	0	S772		• •	5772
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project *SBIR/STTR (756)			Total Prior to EY 1994 12923	EV 1994 3846 606 3965 8417	EV 1995 31385 3838 3871	EY 1996 36262 3828 11115 51205	EV 1997 29044 2822 3572 35438	Budget to Complete CONT CONT CONT CONT	Total Program CONT CONT CONT CONT
			Page K Of R Pages				0 14 14 14 14 14 14 14 14 14 14 14 14 14	ç	

632

Item 71

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit	()		DATE <b>F.e</b>	February 1995	966
BUDGET ACTIVITY  And Manifacturing Development	Developer	ent.	PE NI 060	PE NUMBER AND TITLE OG04321A All S	All Source Analysis System (TIARA)	9 Analysi	s Systen	TIARA		PROJECT D2FT
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1998 Estimate	FY 1987 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2FT ASAS Operational Test	0	2865	1483	1990	3383	88	0	0	0	0
C. Other Program Funding Summary: Not Applicable	olicable									
D. Schedule Profile	FY 199	•	Į	۲۰ 1995		FY 19	*		FY 1997	
1 ASAS Operational Testing/Assessment	2 3	4	- *	2 3	4 L X	2 3	3	-	3	4 X
			Page 7 of 8 Pages	A Pages				Exhibit R-2	ý	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OST BRI	EAKDO	WN (R-3	(	DATE	February 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604321A AII S	A AII SO	אוזרוב All Source Analysis System (TIARA)	ysis Syste	m (TIAR		PROJECT D2FT
A. Project Cost Breakdown	Ì	300	) oo i				
Operational Test , Evaluation , Assessment 0 Total		1995 2955 2955	1493 1493 1493	1990 1990 1990			
B. Budget Acquisition History and Planning Infortration							
Performing Organizations Contractor or Contract							
	Total Prior to					Budget to	Total
Vehicle Date EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Support and Management Organizations: N/A Test and Evaluation Organizations							
OPTEC MIPR			2955	1493	1990	3881	10319
Government Furnished Property: None							
Subtotal Product Development Subtotal Support and Management							
Subtotal Test and Evaluation Total Project			2955 2955	1493 1493	1990	3881 3881	10319
Page	Page 8 of 8 Pages				Exhibit R-3	.3	
							110 21

634

Item 71

RDT&E BUDGET ITEM JU		TIFICAL	TION SH	EET (R	STIFICATION SHEET (R-2 Exhibit)	ji (j		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060	PE NUMBER AND TITLE 0604325A Adva	DE NUMBER AND TITLE OGO Wissile System Heavy	Missile	System	leavy	# <b>C</b>	PROJECT <b>DE18</b>
COST (In Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE18 Advanced Missile System Heavy	0	0	88	1463	15919	51251	56756	50681	218507	395602
A. Mission Description and Budget Item Justification Provides for Engineering Manufacturing Development for Advance Missile System Heavy, (AMS-H), a vehicle mounted, crew served Heavy Anti-tank Missile System which will replace/supplement the TOW missile family. It will be integrated onto and fired from the High Mobility Multi-purpose Wheeled Vehicle (HMMWV) with Irr.proved Target Acquisition System (ITAS) and on the Bradley Fighting Vehicle (BFV) with Improved Bradley Acquisition System (IBAS) platforms. The AMS-H will be capable of operating out to the maximum range required in the Heavy Anti-armored Weapon (HAW) Systems Qualitative Materiel Requirements (QMR) and will perform under day/night adverse weather conditions and obscurants. The AMS-H will be countermeasures hardened and will increase crew survivability. The AMS-H will be a competitive EMD program based on performance specifications. Projects within this element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in this budget activity 5.	nent for Advamily. It will on the Bradle ange required in and obscum formance speciformance specifications.	ance Missile be integrate y Fighting V in the Hear ants. The A cifications.	System Heard onto and figure (BFV) and anti-armo (MS-H will the Projects with laced in this	ry, (AMS-H ired from that ) with Impra ored Weapon oe counterma uin this elem budget activ	i), a vehicle i e High Mobi oved Bradley oved Bradley (HAW) Sys easures hard tent support rity 5.	nounted, cre lity Multi-pr Acquisition tems Qualit ened and wil	w served He urpose Whee Sub-system stive Material increase outs in the entry in the	avy Anti-tar iled Vehicle I (IBAS) plar el Requirem el survivab igineering a	nk Missile S. (HMMWV) tforms. The ents (QMR) vility. The A nd manufact	with AMS-H and will MS-H
FY 1996 Planned Program:  EMD Preparation. (995)  Initiate Program Milestone II Documentation  Prepare Request for Proposal for missile and platform integration.  Conduct system and technical analysis	tion ind platform i	ntegration.								
<ul> <li>FY 1997 Planned Program:</li> <li>EMD Preparation. (1493)</li> <li>Complete development of Program Milestone II Documentation</li> <li>Conduct Source Selection</li> <li>Complete Milestone II Review</li> </ul>	itone II Docu	nentation								
B. Program Change Summary		FY 1994		FY 1995	FY 1996	FY 1997	76			
Appropriated Value Adjustments to Appropriated Value Current Budget Submit/President's Budget					\$66	14	1493			
			Page 1 of 3 Pages	3 Pages				Exhibit R-2	5	

Item 72

PENUMERIAND TITLE   DE04325A Advanced Missile System Heavy   PENUMERIAND TITLE   Collect Processing Simeary	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATION	HS NC	ET (R-2	? Exhibit	2		DATE	4	90
To To Summary:  FY 1994 EY 1995 EY 1996 EY 1999 EY 2000 EY 2001 Compiled by the compiled by th		evelopme	ant	PE NI 060	JABER AND	TITLE Advanced	Missile :	System F		indary 18	CE
FY 1994 FY 1995 FY 1996 FY 1997 FY 1998 FY 1999 FY 2000 FY 2001 Compiled to the compiled to th	C. Other Program Funding Summary										
67782 37245 7378 9543 1592 FY 1994 FY 1995 FY 1996 FY 1997 1 2 3 4 1 2 3 X 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 2 3 X 1 1 1 2 3 X 1 1 1 2 3 X 1 1 1 2 3 X 1 1 1 2 X 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Missile Procurement. Army	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
FY 1994 FY 1995 FY 1996 FY 1997 FY 199	TOW 2 C59300	67782	37245	7378	9543				1592		2267603
1 2 3 4 1 2 3 4 1 2 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	D. Schedule Profile	FY 1994	,	<b>i.</b>	Y 1995		FY 199	<b>9</b> 2	<b>14</b> 4	بل 1997 عام 1997	
Page 2 of 3 Pages Exhibit R-2	Release RFP Complete Source Selection Milestone II Review	<b>7</b>	❖	-	m	<del>4</del>	6		-	m	4 X>
EXHIDIT K-7											<
				c in y axin	rages				EXIIIDIT K-Z		Item 73

636

Item 72

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BRE	AKDO	WN (R-3		DATE Fe	February 1995	35
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604325A Adva	ND TITLE	ced Missi	TITLE Advanced Missile System Heavy		g O	PROJECT <b>DE18</b>
A. Project Cost Breakdown Primary Hardware Development	FY 1994	FY 1995	<u>\$</u>	FY 1996	FY 1997			
Training Development Program Management Support Developmental Test and Evaluation Total				935 60 995	1403 90 1493			
B. Budget Accaristion History and Planning Information								
Performing Organizations  Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity  Activity Vehicle Date EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Product Development Organizations PRIME TBD TBD TBD Platform TBD TBD	OBT OBT						312022 4769	312022
Integration Support and Management Organizations PM CCAWS, PO					297	445	12662	13404
RSA, AL MICOM, RSA,AL PO					493	739	21619	22851
MISC PO					145	219	8177	8541
Test and Evaluation Organizations TECOM, APG, MD PO					99	8	33865	34015
Government Furnished Froperty: N/A Subtotal Product Development Subtotal Support and Management					935	1403	316791 42458	316791
Subtotal Test and Evaluation Total Project					995	1493	393114	395602
	Page	Page 3 of 3 Pages.				Exhibit R-3	k-3	
		637						Item 72

637

RDT&E BUDGET ITEM JU	EM JUS	TIFICAL	ION SH	IEET (R.	ISTIFICATION SHEET (R-2 Exhibit)	it)		DATE Fet	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	Developm	ment	PE NI 060	PE NUMBER AND TITLE 0604604A Medi	PENUMBER AND TITLE OGO 4604A Medium Tactical Vehicles	actical V	'ehicles		į	
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
Total Program Element (PE) Cost	8736	6452	0	0	0	0	0	1686	Continuing	Continuing
DH07 Family of Medium Tactical Vehicles (FMTV)	62.69	6452	0	0	0	0	0	1666	Continuing	Continuing
DH08 Extended Service Program (ESP)	1781	0	0	0	0	0	0	0	0	8
DH10 Cab Over Engine - Heavy HMMAVV (COHHV)	97	0	0	0	0	0	0	0	0	0

# A. Mission Description and Budget Item Justification

the first 5 year multi-year contract due to budget constraints. Bringing these vehicles or line as soon as possible supports the pure fleeting of FMTV to reduce the logistics This program element (PE) supports modernization of the Army's medium truck fleet. The Family of Medium Tactical Vehicles (FMTV) and Extended Service Program impact and operating and support costs. Project DH08 is a Congressional interest program which provides upgrade to selected 2 1/2 ton truck assets through the addition years. Fluit will also provide a follow-on to the current M939/A2 Series 5 ton truck. Body styles currently under development under Project DH07 were deferred from (ESP) will replace/remanufacture existing and aging M44 Series 2 1/2 ton trucks, M39 and M809 Series 5 ton trucks which are beyond their average useful life of 20-22 of a new engine which meets the EPA emission standards and includes current technology power train components. ESP allows the total Army (Active, Reserve, and evaluation of the Cab Over Engine Heavy HMMWV (COHHV). The projects in this Program Element support research efforts in the engineering and manufacturing National Grand) to enhance its readiness in a time of declining defense spending. Project DH10 is also a Congressionally directed program which funds test and development places of the apquisition strategy and are therefore correctly placed in Budget Activity 5.

or first in the fitting to fitting to fitting the LMTV) and 5 ton truck (MTV) requirements, resolve operational deficiencies and operate throughout the theater as multi-purpose Project DH07 - This project supports the development of the FMTV Special Body Variants (MTV Tanker, MTV Expandable Van, LMTV Trailer and MTV Trailer). "" This system is designed by combat, combat support and combat service support units. This system is designed to be rapidly deployable wor. Iwide and operate on primary and according reads, trails, and cross-country terrain. Vehicles operate in all climatic conditions.

### FY94 Accomplishments

- Continuation of Special Body Variant Prototype contract (4455)
- Developmental Testing (2408)
- Government Engineering Support (66)

Page 1 of 9 Pages

Exhibit R-2

Item 73

638

RDT&E BUDGET ITEM JUSTIFICATION	TIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604604A Medium Tactical Vehicles	

Finalize Special Body Variant Prototype contract and Develop Technical Data Package (2683) FY 95 Planned Program

- Developmental Testing (1414)
- Government Engineering Support (20)
- Reprog/Payback PM, TMDE (2200)
- SIBR/STTR (135)

FY 96 Planned Program: Program not funded in FY 96

FY 97 Planned Program Program not funded in FY 97

vehicle that meets current emission standards and includes numerous safety improvements. ESP vehicles will be equipped with a Central Tire Inflation System (CTIS) for Project DH08 - Medium Truck Extended Service Program (ESP) is a remanufacturing program for the M44A2 series 2 1/2 ton cargo truck in CONUS. ESP provides a enhanced mobility, automatic transmission and power steering. The new vehicles will have much lower operating and support costs as compared to the current fleet.

### FY94 Accomplishments

- Technical Data Package (TDP) (1268)
- Parking brake analysis and paper study for armoring of 2 1/2 ton vehicles (115)
- Government Engineering and Testing of Technology Insertion (378)

FY 95 Planned Program: Program not funded in FY 95

FY 96 Planned Program: Program not funded in FY 96

FY 97 Planned Program: Program not funded in FY 97

the added carability of a 5,000 lb payload and a three person cab. The COHHV provides roll-on/roll-off capability on a C-130, which coupled with an increase in payload Project DH10 - The Cab Over Engine Heavy HMMWV (COHHV) was designed and developed by AM General and is a variant of the HMMWV family of vehicles, with may be utilized in various command and control missions. FY94 funding completes Airdrop and External Air Transport Certification of the COHHV.

## FY94 Accomplishments

Airdrop and External Air Transport Certification (46)

Page 2 of 9 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (R.	-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604604A Medi	Nedium Tac	PENUMBER AND TITLE 0604604A Medium Tactical Vehicles	
FY 95 Planned Program: Program not funded in FY 95				
FY 96 Pis: ned Program: Program not funded in FY 96				
FY 97 Planned Program: Program not funded in FY 97				
B. Program Change Summary				
Previous President's Budget 6548 Appropriated Value 6447 Adjustments to Appropriated Value 2289	24 FY 1995 18 6541 17 6452 39	EY 1996 1821	FY 1997 1785	
Current Budget Submit/President's Budget 8736	36 6452	0	0	
	Page 3 of 9 Pages			Exhibit R-2
				Item 73

640

Item 73

ب

RDT&E BUDGET ITEM JUS		TIFICATION SHEET (R-2 Exhibit)	ON SHE	ET (R-2	Exhibit			DATE Fel	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NU 060	PE NUMBER AND TITLE 0604604A Medi	אזזונ Medium Tactical Vehicles	actical V	ehicles		20	PROJECT DH07
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DH07 Family of Medium Tactical Vehicles (FMTV)	6289	6452	0	0	0	0	0	1696	Continuing	Continuing
C. Other Program Funding Summary									Ę	T. 24.01
OPA1 Family of Medium Tactical Vehicles (MYP) D15500	FY 1994 28984	FY 1995 386035	FY 1996 39692	FY 1997 0	FY 1998 14315	FY 1999 154192	EY 2000 301134	FY 2001 365594	Cont	Cont
D. Schedule Profile	FY 1994		Ē.	FY 1995		FY 1996	92		FY 1997	
Develop Prototypes  Develop SSP Developmental Testing Finalize Drawings	3	<b>*</b>	- **	. m	4 X	6	• m	-	3	4
			Page 4 of 9 Pages	Pages				Exhibit R-2	2	

RDT	&E PROG	RAM ELE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	) JECT C	OST BE	REAKDO	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	g And Manu	facturing	Jevelopment		PE NUMBER AND TITLE 0604604A Med	AND TITLE	ım Tactica	TITLE Medium Tactical Vehicles			PROJECT DH07
A. Project Cost Breakdown	eakdown										
Product Development	=			FY 1994 4521	E	FY 1995 2703	FY 1996	FY 1997			
Developmental Testing	ing			2408		1549					
Reprogramming Total				6626		2200					
B. Budzet Acquisition History and Planning Information	tion History and	Planning In	ormation								
Performing Organizations	zations		·								
Contractor or	Contract	•									
Performing	Method/1ype or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	nt Organizations										
Teledyne	C-FFP	Oct 88	13515	13515	13515						13515
(Prototype)	7	3	74600	74600	14600						
(Prototype)		3	00041	000	30.41						14300
Stewart Stevenson	C-FFP	Oct 88	17204	17204	17204						17204
Stewart Stevenson	C-FFP	Oct 91	10100	10100	10100						10100
(Tech Data Pkg)							٠				
Stewart Stevenson (Tech Data Pkg	SS-FFP	Jun 92	9161	9161	9161						1916
update)											
Stewart Stevenson (Special Bodies	SS-CPFF	Sep 92	12750	12750	6819	4455	1476				12750
Prototype)											
Stewart Stevenson (Special Bodies		Jun 95					1207				1207
TDP)											
				Page	Page 5 of 9 Pages	S			Exhibit R-3	2-3	

642

Item 73

RDT&E PROGRAM ELEMENT/PROJEC	(PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604604A Medi	AND TITLE	PENUMBER AND TITLE O604604A Medium Tactical Vehicles	l Vehicles		,	PROJECT DH07
Contractor or Contract  Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	, Budget to Complete	Total Program
TACOM, MI Govt Eng (all other fld activities)	1024	3	2				1024
Support and Management Organizations N/A							
Tecom (APG)	3000	49	1025				7674
TEXCOM (OPTEC) PM, TMDE	636	2359	524				3519
Government Furnished Property: N/A							
Subtotal Product Development	Total Prior to EY 1994 66729	FY 1994 4521	FY 1995 2703	FY 19%	FY 1997	Budget to Complete Cont	Total Program Cont
Subtotal Support and Management Subtotal Test and Evaluation Total Project	10236 76965	2408 6929	3749 6452				
	Page 6 of 9 Pages	Ş			Exhibit R-3	R-3	

RDT&E BUDGET ITEM JUS	EM JUST	TIFICATION	ON SHE	SHEET (R-2 Exhibit)	Exhibi			DATE	February 1998	79%
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NI 060	PE NUMBER AND TITLE 0604604A Medi	Nedium Tactical Vehicles	actical V	ehicles			PROJECT DH08
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to	Total Cost
DHUB Extended Service Program (ESP)	1761	0	0	0	0	0	0	0		8
C. Other Program Funding Summary										
OPA1 Extended Service Program (DV0009)	EY 1994 17615	EY 1995	EY 1996	FY 1997	FY 1998	FY 1999	FY 2000	EY 2001	To Compl	Total Cost 17615
D. Schedule Profile	FV 1994		Ĺ	7004		5	y			
Award Contract - Tech Data Package X*	2 3	4	1 2	2 3	4	ri 1956 2 3	ξ w 4	-	FY 1997 2 3	4
	*	•			×					
First Unit Equipped (FUE)					<b>!</b>	×				
			Page 7 of 9 Pages	Pages				Exhibit R-2	•	<del></del>
			***							1

Item 73

RDT&E PROGRAM ELEMENT/PROJECT	ပ	OWN (R-3)		DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604604A Medi	ЭТІТІЕ Medium Tactical Vehicles	l Vehicles	PROJECT DH08
A. Project Cost Breakdown	004 FV 1004	FV 1006	FV 1907	
Product Development 1 Developmental Testing Total 1		1770		
B. Budget Acquisition History and Planning Information: Not Applicable				
•				
	Pare 8 of 9 Pares			Exhibit R-3

, .

RDT&E BUDGET ITEM JUSI	M JUST	TIFICATION SHEET (R-2 Exhibit)	ON SHE	ET (R-2	Exhibit	<b>a</b>		DATE <b>Fel</b>	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Developn	Developm	ment	PE NL	PE NUMBER AND TITLE 0604604A Medi	IITLE Aedium T	E NUMBER AND TITLE 0604604A Medium Tactical Vehicles	ehicles			PROJECT DH10
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DH10 Cab Over Engine - Heavy HMMWVV (COHHV)	46	0	0	0	0	0	0	0	0	8

C. Other Program Funding Summary: Not Applicable

D. Schedule Profile: Not Applicable

Page 9 of 9 Pages

Exhibit R-2

646

UNCLASSIFIED

Item 73

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	ION SH	IEET (R	-2 Exhit	oit)		DATE <b>Fet</b>	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develor	Jevelopm	pment	PE NI 060 Sys	PE NUMBER AND TITLE 0604609A Smo Systems - ED	тіт <u>г</u> е Smoke, O :D	bscurant	. & Targe	ENUMBER AND TITLE )604609A Smoke, Obscurant & Target Defeating Systems - ED		PROJECT <b>D200</b>
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D200 Smoke/Obscurant - /stems	17140	3703	2000	0	0	2798	5196	7482	Continuing	7482 Continuing Continuing

# A. Mission Description and Budget Item Justification;

Dual Purpose Mechanical Smoke Generator, XM56 mounted on the High Mobility Multi-Purpose Wheeled Vehicle (HMMWV) to provide large area visual, infrared (IR) and millimeter wavelength (MMW)-radar obscuration; (2) Generator, Smoke, Mechanical; Mechanized Smoke Obscurant System, XM58, consists of components of the MMW/IR Smoke Grenades which support the Vehicle Integrated Defense System. The XM81 provides IR and MMW screening from smart Anti-Tank Guided Missiles This program element supports the conduct of Engineering and Manufacturing Development (EMD) in smoke and obscurant agents, munitions, and devices to improve survivability of the combined arms force, complement combined weapons systems, and enhance force effectiveness and combat power. Funding supports (1) Motorized (ATGM) and top attack weapons, and (4) also provides funds to close out the XM1101 Mechanized Projected Smoke. The projects in this Program Element support XM56 mounted on a M113A3 carrier. The XM58 will equip smoke units in heavy units resulting in improved vehicle maneuverability and survivability; (3) XM81 research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

visual and in. ared reconnaissance intelligence surveillance and target acquisition threats in support of mechanized forces. The XM56 Motorized Large Area Screening Project D200 -Smoke/Obscurant: The XM58 Smoke System will provide maneuver commanders the capability of generating large area screens to shield forces from System provides visual and infrared obscuration and increases survivability of light motorized forces by defeating or degrading threat surveillance and weapon system sights operating in the visual through far-infrared regions of the electromagnetic spectrum.

# FY 1994 Accomplishments:

- XM56-Completed Pre-Production Qualification Test (PPQT) and conducted Initial Operational Test and Evaluation (IOT&E) (6616)
- XM56-Completed engineering and manufacturing development (EMD) and conducted MSIII and Type Classification (2224)
- XIM58-Conducted engineering and manufacturing development and initiated PPQT (4900)
- XM1101-Closed-out (400)
- XM81-Initiated PPQT MIMW/IR Grenade (1740)
- XM81-Completed System Engineering (1260)

# FY 1995 Planned Program:

- X7458-Conduct PPQT and Milestone III/Type classification (1754)
- XM81-Complete MMW/IR Grenade System Engineering and incorporate changes resulting from PPQT (1771)
  - XM81-Conduct MSIII TC IPR MIMW/IR Grenade (100)

Page 1 of 5 Pages

Exhibit R-2

Item 74

RDT& EBUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATION	ON SHE	ET (R-2	Exhibi	5		DATE	February 1995	360
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	lent	PE NU 960 Sys	PE NUMBER AND TITLE 0604609A SMO Systems - ED	пте imoke, O D	bscuran	t & Targe	PE NUMBER AND TITLE 0604609A Smoke, Obscurant & Target Defeating Systems - ED	<b>B</b> u	
• SBIR/STTR (78)										
FY 1996 Planned Program:  • XM56-P31 Modularity Complete design (drawings/tech data), (1600)  • XM56-P31 Modularity Conduct technical/user testing (300)  • XM56-P31 Modularity Conduct Milestone III In-Process Review (100)	ngs/tech data esting (300) i-Process Re	ı), (1600) view (100)								
FY 1997 Planned Program: No Planned Program										
B. Program Change Summary:										
Previous President's Budget Appropriated Value Adjustments to Appropriated Value a SBIR/STTR decrement (.264)		FY 1994 17096 17096 +44		FY 1995 3754 3703	FY 1996 4001	FY 1997 5013	<u> 1997</u> 5013			
b. Reprogram into PE (309) Current Budget Submit/President's Budget		17140		3703	2000		0			
C. Other Program Funding Summary:									E	
RDTE, A Budget Activity 2, PE 0602622A, Project A552 Smoke/Novel Effects Munitions	FY 1994 4025	FY 1995 2032	FY 1996 1891	FY 1997 1990	FY 1998 2316	FY 1999 2984	FY 2000 3484	FY 2001 3575	Compl Cont'd	Cont'd
RDTE, A Budget Activity 4, PE 0603627A, Project DE79 Smoke, Obscurant and Equipment Defeating Systems OPA-1, A Appropriation	5067	2789	3248	6567	5782	4976	0	0	Cont'd	Cont'd
D15402, M1097 Heavy HMMWV OPA-3, A Appropriation	0	0	56227*	0	0	0	0	0	0	12480
M99103, XM56 Smoke Generator	4900	12410	0	13014	13309	0	0	0	10003	\$3636
			Page 2 of 5 Pages	Pages				Exhibit R-2		
			648							Item 74

RDT&E BUDGET ITEM JUST	A JUSTI	<b>FICATI</b>	<b>IIFICATION SHEET (R-2 Exhibit)</b>	ET (R-2	Exhibit	(2)		DATE Feb	February 1995	95
BUDGET ACTIVITY			PE NU	PE NUMBER AND TITLE	ITLE O	400	Terre			PROJECT 0.200
5 - Engineering And Manuracturing Development	evelopme		Sys		nioke, C	Decurant	8 - arge	Silloke, Obscuraill & Laiger Deleating ED		3
									ို	Total
Month of Marks Control	FY 1994	FY 1995	EY 1996	EY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl 7464	Cost 41916
INITION, ALVINO BILLONG CONCIDENT	>	>	0/071	25021		•	•	•		2777
M99104, M157A1E1 Smoke Generator	0	0	5214	3614	0	0	0	0	0	8828
Modification Kits, M157A1E1 Smoke Generator	0	0	2787	0	0	0	0	0	0	2787
Ammo, A Appropriation										
E82200, XM81 Smoke Grenade	0	0	4000	4000	4000	4000	0	0	0	16000
* Appropriation supports Heavy HMMWV for XM56 SGS (12	% SGS (124	(084)								
D. Schedule Profile.										
	FY 1994	4	E ~	FY 1995 2 3	4	FY 1996 2 3	ბ	1 2	FY 1997 2 3	4
XM58-Initiate PPQT	l	×		ı						
XM58-Conduct PPQT			×							
XM58-Initiate 10T&E				×						
XMS8-Complete IOT&E				×						
XM58-Conduct MS III/TC					×					
XM56-Complete PPQT	•×									
XM56-Conduct IOT&E	×									
XM56-Conduct MSIII/TC		*								
XM56-Complete P31 Modularity Design						×	;			
XM56-Complete P31 Mod Tech/User Test							; *			
XM56-Conduct P31 Modularity MS III							×			
XM81-PPQT Hardware Fabrication	×									
XM81-Initiate PPQT		×								
XM81-Complete PPQT			×							
XM81-Milestone III					×					
			Page & of & Pages	Pages				Exhibit R-2		
			7 17 2 3 3 1	777						75

649

RDT&E PROGRAM ELEMENT/PROJE	RAM ELE	MENT/P	ROJECT	CT COST BREAKDOWN (R-3)	EAKDO	WN (R-3	(3)		DATE	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	And Manuf	acturing C	Jevelopment		PENUMBER AND TITLE 0604609A Smo Systems - ED	AND TITLE  A Smoke  S - ED	ोगा।∈ Smoke, Obscurant & Target Defeating ED	ant & Tare	get Defea		PROJECT D200
A. Project Cost Breakdown:	kdow <u>n:</u>										
	İ			FY 1994	Ŧ	FY 1995	FY 1996	FY 1997			
Primary Hardware Development	elopment			616			300				
Systems Engineering				1902		1281	200				
Integrated Logistics Support	pport			1291		111	200				
Quality Assurance				382		111	90				
Reliability, Maintainability and Availability	ility and Avail	ability		195		111	01				
Configuration Management	ment			232		117	ુ જ				
Technical Data				871			8				
Test and Evaluation				3045		200	300				
Contractor Engineering Support	Support	• :		4673			0				
Government Engineering Support	ng Support			009			300 200				
Program Management Support	Support			637		420	81				
Program Management Personnel	Personnel			868		568	150				
Travel				174			20				-
Miscellancous				1111		106	240				
Hardware				543		300	) I				
SBIR/STTR						78					
Total				17140	•	3703	2000				<del></del>
B. Budget Acquisition History and Planning Information:	History and	Planning Infe	ormation:								
Performing Organizations	tions										
Contractor or C	Contract										
<b>.</b>	Method/Type	Award or	Performing	Project	Total						
Performing 01	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	Organization	<b>•</b> n									
Chamberlain MRC C	C/CPFF	Sep 87	36787	36787	32215	4572					18787
•	MIPR	Mar 94	1342	1342		1342					1342
	MIPR		54846	54846	41075	6617	1754	2000		3400	54846
ITT Research			2801	2801	2801						2801
MICOM			2022	2022	2022						2022
				Page	Page 4 of 5 Pages	ک			Exhibit R-3	က	
					059						Item 74
					oco						T III

RDT8	RDT&E PROGRAM ELEMENT	ZAM ELE		<b>JUECT (</b>	PROJECT COST BREAKDOWN (R-3)	EAKDO	WN (R-3		DATE F8	February 1995	96
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develop	And Manuf	acturing [	Development		PE NUMBER AND TITLE 0604609A Smo Systems - ED	AND TITLE  A Smoke	, Obscura	Smoke, Obscurant & Target Defeating	jet Defeat	ing	
Contractor or Contract Government Method/Type Awar Performing or Funding Oblig Activity Vehicle Date ERDEC (XM81) PO	Contract Method/Type or Funding Vehicle PO	Award or Obligation Date Sep 94	Performing Activity EAC	Project Office EAC 15071	Total Prior to EY 1994 10200	EY 1994 3000	EY 1995 1871	EY 1996	FY 1997	Budget to <u>Complete</u>	Total Program 15071
Sobran, inc. SS/CPFF  Test and Evaluation Organizations Misc.	SS/CPFF Organizations MIPR	Oct 93	236	236	5034	236					236
Covernment Furnished Property: None	ed Property: 1	None									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	elopment Management sluation				Total Prior to EY 1994 88313 5034	EV 1994 15531 236 1373 17140	EY 1995 3625 3625	EY 1996 2000 2000	EY 1997	Budget to Complete 3400	Total Program 112869 236 6407
• Does not include SBIR/STTR (78)	BIR/STTK (78)										

Page 5 of 5 Pages

Exhibit R-3

RDT&E BUDGET ITEM JUS	EM JUS	TIFICAT	ION SH	IEET (R	IFICATION SHEET (R-2 Exhibit	it)		DATE <b>Fet</b>	February 1995	95
BUDGET ACTIVIT: 5 - Engineering And Manutacturing Developm	Jevelopm	nent	PE NI 000	PE NUMBER AND TITLE	ENUMBER AND TITLE 1604611A JAVELIN (AAWS-M)	AAWS-N	(1		2 2	PROJECT <b>D499</b>
COST (in Thousands)	FY 1984 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1908 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D489 JAVELIN	47205	34268	0	0	0	0	0	0	0	614285

combined arms team employment. The infantry must have the capability to defeat numerically superior armored forces. The present medium infantry antitank weapon is countermeasures and will not require extensive training for effective employment. Active protection system developments will be considered and modifications studied to DRAGON. The system developed within this PE will replace the DRAGON to provide enhanced lethality for the early entry force. It will have a high kill rate against all known armor threats at extended ranges under day/night, adverse weather conditions and in the presence of battlefield obscurants. This system will be hardened against A. Mission Description and Budget Item Justification
This Program Element (PE) provides for the continuation of Engineering and Manufacturing Development (EMD) of a manportable antitank weapon system for the defeat these devices if necessary. EMD/Technical Support will conclude in FY 1995. This project supports research efforts in the engineering and manufacturing development phase of the acquisition strategy and therefore is appropriate to Budget Activity 5.

# FY 1994 Accomplishments:

- EMD Contract/EPP Contract/FTT Upgrade/Advanced Warhead Major Contracts (32791)
  - Complete 10 TE/PPQT System Testing (2515)
    - In-House Support (10712)
      - Support Contract (1187)

# FY 1995 Planned Program

- EMD Contract/EPP Contract/FTT Upgrade/Advanced Warhead Major Contracts (22726)
- In-House Support (6967)
- Other Government Agency (3856)
  - SBIR/STTR (719)

Page 1 of 4 Pages

Exhibit R-2

652

RDT&E BUDGET ITEM JUS		-ICATIO	N SHE	ET (R-2	TIFICATION SHEET (R-2 Exhibit)			DATE Fe	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develop	<b>Development</b>	ınt	PE NUI	PE NUMBER AND TITLE 0604611A JAVE	JAVELIN (AAWS-M)	AAWS-M			E 0	PROJECT <b>D499</b>
B. Program Change Summary										
Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SBIR/STTR decrement (-732)		EY 1994 47437 47437 -232		FY 1995 31337 34268	FY 1996	FY 1997	<u> </u>			
b. Reprogrammed to PE (+500) Current President's Budget Submit		47205		34268						
C. Other Program Punding Summary									į	ŧ
Missile Procurement, Army CC0067 JAVELIN	FY 1994 207268	EY 1995 212583	FY 1996 171428	FY 1997 168200	FY 1998 154022	FY 1999 151303	FY 2000 202463	FY 2001 293499	To Compl 1251227	Total Cost 2830298
D. Scheduk Profile	FY 1994		E	FY 1995		FY 1996	vo		FY 1997	_
Complete PPQT System Tests X• Award Long Lead Time Items Contract X• Conduct 10TE LRIP Decision Award LRIP I Contract Award LRIP II Contract Conduct Physical Configuration Audit Initiate Production Verification Test Award LRIP III Contract Conduct System Level Live Fire Tests First Unit Equipped Milestone III Award FRP Multivear	r	•	- ×	<b>m</b>	- ×× -	6	<b>~</b> ×××	-	e ×>	4
			Page 2 of 4 Pages	Papes				Exhibit R-2		

RDT	&F PROG	RAM ELI	RDT&E PROGRAM ELEMENT/PROJECT	JECT C	OST BE	COST BREAKDOWN (R-3)	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY 5 Engineering	3 And Manul	facturing	SET ACTIVITY Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604611A JAVI	A JAVEL	JAVELIN (AAWS-M)	-M)		g O	PROJECT D499
A. Project Cost Breakdown	eakdown										
Major Contract Support Support Contractor Program Management Support Research and Development Center Support Test Support Miscellaneous (OGA) SBIR/STTR	port nt Support apment Center Si ()	upport		EY 1994 32791 1187 4834 3964 2515 1914		FY 1995 22726 3901 3066 2768 1088 719	FY 1996	FY 1997			
Total				47205		34268					
B. Budget Acquisition History and Planning Information	tion History and	Planning In	formation								
Performing Organizations	izations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations	nt Organizations										
TI/MM JV EMD	C/CPIF	06/21/89	462700	465500	439415	32791	22726				494932
Support and Management Organizations	ement Organizat	ions									
Support Contractor In-House Support (Core, Collocated, Labs, OGAs)	8(a)/CPFF		<b>∀</b> Ż	N/A	5560 65073	1187	8055				6747 83840
				Page	Page 3 of 4 Pages				Exhibit R-3	£-3	
					654						Item 75

4

RC	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PR	PROJECT (	SOST BF	COST BREA "DOWN (R-3)	WN (R-3		DATE F	February 1995	95
BUDGET ACTIVITY 5 - Enç;ineeri	SUDGET ACTIVITY  5 - Englineering And Manufacturing Development	facturing i	Jevelopment		PE NUMBER AND TITLE 0604611A JAVI	IA JAVEL	JAVELIN (AAWS-M)	3-M)		9 O	РРОЈЕСТ <b>D499</b>
Contracter or Government Performing Activity Test and Evaluati	Contracter or Contract Government Method/Type Performing or Funding Activity Vehicle Test and Evaluation Organizations	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
RTTC					16203 6571	2227 288	2703 65				21133
Government Pur	Government Furnished Property										
Item <u>Description</u>	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Delivery <u>Date</u>		Total Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property	ment Property										
Support and Man	Support and Management Property										
Test and Evaluation Property	ion Property										
Subtotal Product Development Subtotal Support and Manager Subtotal Test and Evaluation SBIR/STTR Total Project	Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation SBIR/STTR Total Project				Total Prior to FY 1994 439415 70633 22774 532822	FY 1994 32791 11899 2515 47205	EY 1995 22726 8055 2768 719 34268	FY 1996	FY 1997	Budget to Complete	Total 494932 90587 28057 719 614295
				Pas	Page 4 of 4 Pages	S			Exhibit R-3	R-3	
					<b>337</b>						Item 75

RDT&E BUDGET ITEM JU	EM JUS	TIFICAT	HS NOI	EET (R	STIFICATION SHEET (R-2 Exhibit)	it)		DATE <b>Fe</b> l	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develop	Jevelopn	ment	PE NU 060	PE NUMBER AND TITLE 0604619A Lanc	E NUMBER AND TITLE DE04619A Landmine Warfare	Warfare				PROJECT <b>D088</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1986 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
D068 Wide Area Mine	23272	33356	31028	18253	18092	19745	22283	22248	25400	313978

scatterable mines. The project in this Program Element supports the EMD phase of the acquisition strategy for the Wide Area Mine and is, therefore, appropriately placed A. Mission Description and Budget Item Justification. The Wide Area Mine (WAM) provides unique control and offensive capability for a variety of missions. WAM Development (EMD) of the Basic WAM deployed by hand emplacement with one way communications. The pre-planned product improvement Basic WAM with 2-way command and control and redeployable capabilities will use advanced sensors, computer technology, and warhead technology to extend the range and lethality of present will significantly reduce blue force warpower losses by using advanced smart technology on the battlefield. This program provides for Engineering Development and Validation of wide area mine system concepts which will enhance the U.S. capability in mine warfare. The program provides for Engineering and Manufacturing in Budget Activity 5.

## Project D088 - Wide Area Mine

## FY 1994 Accomplishments

- Procure qualification hardware and fabricate WAM Hand Emplaced Prototype (16877)
  - Complete Systems Qualification Test (2500)
- Complete System Components Critical Design Review (3895)

## FY 1995 Planned Program

- Complete System Critical Design Review (450)
- Complete Contractor Prototype Qualification Review (11022)
- Procure and fabricate Basic WAM Technical Tests/User Tests (TT/UT) hardware (19963)
  - Conduct Basic WAM Milestone IIIa (1240)
- Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) decrement (681)

## FY 1996 Planned Program

- Complete Live Test (2500)
- Complete TT/UT Testing (8462)
- Complete Functional Configuration Audit (3666)
- Complete initial WAM PIP EMD Trade-Off studies (16400)

## FY 1997 Planned Program

Page I of 4 Pages

Exhibit R-2

Item 76

959

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATIC	N SHE	ET (R-2	Exhibit			DATE Fet	February 1995	8
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopme	ent	PE NU 060	PE NUMBER AND TITLE 0604619A Land	TITLE Landmine Warfare	Warfare				
<ul> <li>Complete WAM PIP Ground Platform Preliminary Design Review (6400)</li> <li>Complete WAM PIP Air Sensor Preliminary Design Review (7800)</li> <li>Procure Initial Contractor Systems Component Hardware (4053)</li> </ul>	nary Design Sesign Review Hardware (40	Review (640 v (7800) 353)	<del>(</del>							
B. Program Change Summary		5		900 A	7007	7001 A3	_			
Previous President's Budget		21186	4	33843	31177	18339	~! <b>~</b>			
Appropriated Value Adjustments to Ammoniated Value		21186								
a. SBIR/STTR decrease (-315)										
<ul> <li>b. Reprogramming into PE (+2401)</li> <li>Current Budget Submit/President's Budget</li> </ul>		23272		33356	31028	18253	_			
C. Other Program Funding Summary			ì						To	Total
Appropriation: Procurement of Ammunition,	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
Wide Area Mine, SSN E78100 WAM Individual Trainer, SSN E78103			15000	20000	20000	35000	35000	35000	105000	265000
WAM Collective Trainer, SSN E78104			336	1150						
D. Schedule Profile	FY 1994	4	E ,	FY 1995	-	FY 1996	<b>4</b>		FY 1997	~
Fabricate HE WAM Prototype		×		<b>)</b>	•		•	•	)	•
Qualification hardware		į								
Complete Systems Demonstration Test		×								
Design Reviews		*								
Complete System Critical Design Review		}	×							-
Complete Contractor Prototype										
Qualification Tests				×						
Fabricate Basic WAM Technical Test/					×					
User Test ( JT) hardware										
Conduct WAM Milestone IIIa					×					
			Page 2 of 4 Pages	Pages				Exhibit R-2		
			1							1. mo.1

RDT&E BUDGET ITEM JUSTIFICATION SHEET	SHEET (R-2 Exhibit)	DATE
<b>-</b>	DE NUMBER AND TITLE 0604619A Landmine Warfare	February 1995
	FY 1996	FY 1997
Complete Live Test Complete Functional Configuration Audit Complete Basic WAM Milestone III Complete Basic WAM PIP Trade-Off studies Complete Pl Air Sensor Preliminary Design Review Complete Pl Air Sensor Preliminary Design Review Procure initial contractor system component test hardware  WAM PIP Milestone III - 9/99 DOME Milestone III - 9/92  * Denotes completed	4	
Page 3 of 4 Pages 658		Exhibit R-2 Item 76

RDT&E PROGRAM ELEMENT/PROJ	JECT CO	/PROJECT COST BREAKDOWN (R-3)	OWN (R-3)		DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	# O	PE NUMBER AND TITLE 0604619A Landmine Warfare	dmine Warfa	92	PROJECT DO88
A. Project Cost Breakdown					
	FY 1994	FY 1995	FY 1996	FY 1997	
Primary Hardware Development	19446	27096	25261	14861	
Test and Evaluation	357	584	538	317	
Gov't Engineering Support	2252	3685	3394	1997	
Gov't Program Management	528	<b>8</b> 64	796	468	
GFM	45	74	89	40	
MISC	<del>2</del> 4	1053	971	570	
Total	23272	33356	31028	18253	

B. Budget Acquisition History and Planning Information: N/A

629

Page 4 of 4 Pages

Item 76

Exhibit R-3

RDT&E BUDGET ITEM JU	EM JUS	TIFICAT	TION SH	IEET (R	ISTIFICATION SHEET (R-2 Exhibit)	jį.		DATE FeI	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develop	Jevelopm	ment	PE NI 060	PE NUMBER AND TITLE 0604633A Air	E NUMBER AND TITLE OCONTROL OCO TO THE OCO OCO OCO OCO OCO OCO OCO OCO OCO OC	c Contro			E 0	PROJECT D586
COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
DSEG Air Traffic Control	1985	7786	1813	1636	1880	1922	1122	2341	2341 Continuing Continuing	Continuing

(ATNAVICS) and Tactical Airspace Integration System (TAIS). These systems provide urgently needed communications and precision/non-precision approach and flight following capability in support of Army tactical airfields, remote landing zones, drop zones, pickup zones and temporary helicopter operating areas worldwide. These are (NAVAID), Communication System Modernization and digitization of the ATC structure. The tasks in this Program Element support research efforts in the engineering non-developmental item (NDI) programs. Fixed base ATC efforts funded by this line include Precision Approach Radar (PAR), Navigation Air Systems Modernization A. Mission Description and Budget Item Justification: This program element funds continuously evolving efforts for the development of Air Traffic Control (ATC) systems for both tactical and fixed base applications. It funds the integration and qualification of an Air Traffic Navigation, Integration, and Coordination System and manufacturing development phases of the acquisition strategy and is therefore correctly placed in Bugget Activity 5.

Project D586 - Air Traffic Control

## FY 1994 Accomplishments:

Air Traffic Navigation, Integration, Coordination, Systems (ATNAVICS)/Precision Approach Radar (PAR)

- Evaluation and suitability study and cost saving data (580)
  - Plan developmental test and operational testing (100)

## Factical Airspace Integration System (TAIS)

- Market analysis for state-of-the-art system (483)
  - Design definition/integration analysis (802)

## FY 1995 Planned Program:

#### ATNAVICS/PAR

- Procure prototype system for Developmental testing/initial operational test evaluation (IOTE) (6700)
  - Initial Operational Test Evaluation (IOTE) (200)
    - Design, fabricate, test prototype system (233)
- Plan test under operational conditions (100)
  - SBIR/STTR (162)

Page I of 4 Pages

Exhibit R-2

Item 77

099

RDT&E BUDGET ITEM JUSTIFICATIO	IFICATION SHEET (R-2 Exhibit)	2 Exhibit)		DATE February 1995	6
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604633A Air	TITLE Air Traffic Control	Control	PRO DS	PROJECT <b>D586</b>
<ul> <li>TAIS</li> <li>Design/system integration with Army communication hardware/softw. re digitization integration analysis (88)</li> <li>Hardware/software demonstration (83)</li> <li>Evaluation and suitability study and cost saving data (200)</li> </ul>	digitization integratio	n analysis (88)			
FY 1996 Planned Program: ATNAVICS/PAR • Fixed base PAR Performance Test (100) • ATNAVICS/PAR System Performance (900)					
<ul> <li>TAIS</li> <li>System concept design defination (692)</li> <li>Suitability study and cost saving data (121)</li> </ul>					
FY 1997 Planned Program:  TAIS  Procure prototype system for Developmental Testing/Initial Operational 7  Design, fabricate, test prototype system (738)	Operational Test Evaluation (IOTE) (1100)	(1100)			· <u> </u>
B. Program Change Summary  Previous President's Budget \$600  Appropriated Value \$600  Adjustments to Appropriated Value -3635  a. Leprogramming (-3548)	EY 1995 7873 7766	EY 1996 1821	FY 1997 1846		
b. SBIR/STTR (-87)  Current Budget Submit/President's Budget  1965	7766	1813	1838		
	Page 2 of 4 Pages			Exhibit R-2	
	199				Item 77

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	JUSTIFICA	TION SH	EET (R-	2 Exhibit		DATE	TE February 1995	966
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	velopment	PE	PE NUMBER AND TITLE 0604633A Air	TITLE Air Traffic Control	Control	1		
C. Other Program Funding Summary APA AAOOSO - Air Traffic Control								
<b>Jac</b> i	FY 1994 FY 1995 10761	95 FY 1996 08 8187	FY 1997 7 6449	FY 1998 6172	FY 1999 FY 6269	FY 2000 E	To To To To To To To To To To To To To T	Total Cost Cont'd
D. Schedule Profile	FY 1994	-	FY 1995	-	FY 1996	•	FY 1997	
ATNAVICS/PAR Suitability Study TAIS Market Survey TAIS Design Definition Analysis Procure prototype for ATNAVICS/PAR ATNAVICS Design and Fabricate Evaluation and suitability study for TAIS ATNAVICS/PAR System Performance PAR On Site Operational Demonstration TAIS System Design Definition Procure prototype for TAIS TAIS Design and Fabricate TAIS Developmental Testing	*		~ × ×	<del>-</del>		ú <del>•</del> ×	x x c	* ×
		o c axe i	01 11 0853				יווטון איב	1.em 77

662 UNCLASSIFIED

Item 77

Budget Activity         Per Number And Manufacturing Development         Per Number Air Traffic Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project Control         PROJECT Project	RDT&E PROGRAM ELEMENT/PROJE	CT CO	ST BREA	PROJECT COST BREAKDOWN (R-3)	()	OATE February 1995	
FY 1994     FY 1995     FY 1996       507     FY 1996       511     1021       10     165     7111     100       1     803     655     692       1     1965     7766     1813	ing And Manufacturing Develop	PE 0	NUMBER AND 604633A	ntle Air Traffic Con	trol	PROJE <b>D58</b> (	CT.
FY 1994     FY 1995     FY 1996       ort     997     1021       nt     163     7111     100       rt     803     655     692       rtion     1965     7766     1813	A. Project Cost Breakdown						-
997 1021 165 7111 100 803 655 692 n 1965 7766 1813		Y 1994	FY 1995	FY 1996	FY 1997		•
165 7111 100 803 655 692 n 1965 7766 1813		266		1021	3%		
803 655 692 n 1965 7766 1813		165	7111	001	150		
ion 1965 7766 1813		803	655	692	642		
1813	Development Test and Evaluation				959		
	Total	1965	7766	1813	1838		

B. Budget Acquisition History and Planning Information: Not Applicable

Pare 4 of 4 Pares 663

Item 77

Exhibit R-3

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAL	FION SH	IEET (R	-2 Exhib	3		DATE	February 1995	295
BUDGET ACTIVITY 5 - Engineering And Manufacturing Developm	Developm	nent	PE NU 060 (FC	PE NUMBER AND TITLE 0604640A Futu (FC2V)	ENUMBER AND TITLE 0604640A Future Command And Control Vehicle (FC2V)	mmand	And Con	trol Vehi		PROJECT DG27
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Eathmate	Coet to Complete	Total Cost
DG27 Future Command and Control Vehicle	10625	31676	18238	9989	88	0	0	0	0	74270

# A. Mission Description and Budget Item Justification

capability for the heavy force. The C2V will be capable of command and control during mobile operations. The C2V supports the Army Digitization effort and will be capable of incorporating communications and electronic systems compatible with Army Tactical Command and Control Systems. This program is a Desert Storm The Command and Control Vehicle (C2V) will provide a fully tracked, armored vehicle that will ensure a mobile, responsive and survivable command and control Initiative. Program is currently in Engineering and Manufacturing Development Phase.

## FY 1994 Accomplishments

- Continue Design Effort (4900)
- Fabrication of Pre-Production Vehicles (3200)
  - Government test development (200)
    - Project Management (2225)

## FY 1995 Planned Program

- Fabricate Pre Production Vehicles (15900)
  - Design Logistics Effort (3700)
- Continue Design Engineering (6651)
  - Begin PPQT and Live Fire (270)
    - Project Management (2086)
      - SBBR/STTR (639)

## FY 1996 Planned Program

- Develop TDP (4769)
- Logistics Effort (2800)
- Continue Design Engineering (4462)
  - Prototype Manufacture (70
    - Conduct Live Fire (2700)
- Project Management (2807)

664

Page 1 of 5 Pages

Item 78

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATION	N SHE	ET (R-2	Exhibit			DATE Fe	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ent	PE NUMBER 060464 (FC2V)	PE NUMBER AND TITLE 0604640A Futu (FC2V)	ITLE uture Co	ve NUMBER AND TITLE  0604640A Future Command And Control Vehicle (FC2V)	Ind Cont	rol Vehi		PROJECT DG27
FY 1997 Planned Program  Complete Technical Data Package (800)  Logistics Effort (1100)  Complete Prototype (1000)  Complete Live Fire (2500)  Award LRIP Contract (100)  Project Management (1366)										
B. Program Change Summary										
Previous President's Budget Appropriated Value (Total PE) Adjustments to Appropriated Value	ģ	FY 1994 10654 10654 -129	[1]	EY 1995 32159	EY 1996 17515	EY 1997 9122	C1 C1			
Current President's Budget (FY 96/97)	(91	10525		31676	18238	9989	<b>y</b>			
C. Other Program Punding Summary									•	
GA84200 Command & Control Vehicle GC0173 Spares (Initial) C2V Total PAA Funding	EY 1994	EY 1995	EY 1996	EY 1997 30158 30158	EY 1998 35936 1027 36963	FY 1999 70555 1015 71570	EY 2000 89338 89338	EY 2001 129191 129191	Comp. Cont. Cont.	Total Cost. Cont.
D. Schedule Profile							÷			
MS I/II x •	FY 1994 2 3	4	- F	FY 1995 2 3	4	FY 1996 2 3	λο ευ 4	-	FY 1997 2 3	4
			Page 2 of 5 Pages	Pages				Exhibit R-2	2	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PATE February 1995	PE NUMBER AND TITLE 0604640A Future Command And Control Ve	FY 1994 FY 1995 FY 1996 FY 1997 FY 199	Page 3 of 5 Pages
RDT&E BUDGET	BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Award EMD Contract Complete Design Effort Complete Facility Vehicle Testing Start Developmental Testing Complete Pre-Production Vehicles Start Live Fire Testing LRIP IPR Award LRIP Contracts Complete Developmental Tests Complete Live Fire	

RDT8	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PROJECT		OST BR	EAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	And Manuf	facturing C	<b>Jevelopment</b>		PE NUMBER AND TITLE 0604640A Futu (FC2V)	AND TITLE  A Future	Comman	TITLE Future Command And Control Vehicle	ntrol Veh		PROJECT DG27
A. Project Cost Breakdown	akdown										
Design Engineering Prototype Manufacture	υ			FY 1994 4900 3200	<u>지</u> ::	EY 1995 10351 15900	EY 1996 12031 700	EY 1997 1900 1000			
Test In House Tasks Total				200 2225 10525	m	2700 2725 31676	2700 2807 18238	2500 1466 6866			
B. Budget Acquisition History and Planning Information	on History and	Planning Inf	ormation								
Performing Organizations	ations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	FY 19%	FY 1997	Budget to Complete	Total Program
ent	Organizations SS/CPIF		28000	28000			13500	11600	2900		28000
(LP) San Jose, CA Other Contracts				20200		8100	12751	1131		2000	23982
Support and Management Organizations TACOM CECOM	nent Organizati	ions				1125	1390	1432	1077	35 30	5059 4229
lest and Evaluation Organizations APG, YPG, White Sands	rganizations					200	2700	2700	2500	4900	13000
				Page	Page 4 of 5 Pages	žn.			Exhibit R-3	7-3	
					***						Item 78

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3)		DATE Fe	February 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604640A Futu (FC2V)	AND TITLE	PE NUMBER AND TITLE  0604640A Future Command And Control Vehicle (FC2V)	d And Co	ntrol Vehi		PROJECT DG27
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management	Total Prior to FY 1994	EY 1994 8100 2225	FY 1995 26251 2725	FY 1996 12731 2807	FY 1997 2900 1466	Budget to Complete 2000	Total Program 51982
Subtotal Test and Evaluation Total Project		200	2700 31676	2700 18238	2500	4900 6965	13000 74270
	Page 5 of 5 Pages				Exhibit R-3	ઌ	
	899						Item 78

4

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R	2 Exhibit)		DATE Febr	February 1995	
	PE NUMBER AND TITLE	ITLE			PROJECT	
5 - Engineering And Manufacturing Development	0604641A T	0604641A Tactical Unmanned Ground Vehicle	inned Grour	nd Vehicle	DE47	
	(TUGV)					_
						Τ

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE47 TACTICAL UNMANNED GROUND VEHICLE	0	0	0	2965	2965	2966	2997	2983	0	14946

A. Mission Description and Budget Item Justification. This is a Joint Service Program. This robotic system provides battalion Commanders and below with the ability (JORD) states a need for "combat-expendable" organic unmanned vehicles capable of providing relevant RSTA, chemical vapor detection, patrolling, and hazard/obstacle funding begins. This PE supports research efforts in the engineering, manufacturing and design phase of the acquisition cycle and is therefore placed in Budget Activity detection for the maneuver forces, battalion and below. The project is OSD funded through Milestone II (3rd quarter FY 97), at which point Army and Marine Corps to see and shape the battlefield from a remote location utilizing Reconnaissance, Surveillance and Target Acquisition (RSTA), greatly extending the survivability of combined forces by extending the control radius of human presence on the battlefield. The current Joint Army/Marine Corps Operational Requirements Document 5. This is an ACAT III Program.

## FY 1994 Accomplishments:

- Prepared Milestone I Documentation
- Scheduled Change to Split Combined Milestone I/II
- Staffed Joint Operational Requirements Document (JORD)

## FY 1995 Planned Program:

- Obtain Milestone I Decision
- B Specification Development
- Begin Technical Testing on Demonstration and Validation Test Assets
  - Initiate User Appraisals

## FY 1996 Planned Program:

- Continue Technical Testing/User Appraisals
  - Test/Resolve Critical Issues
- Develop and Release Engineering and Manufacturing Development (EMD) Request for Proposal

## FY 1997 Planned Program:

- Obtain Milestone II Decision (1492)
- EMD Contractor Source Selection/Contract Award (1493)

Page I of 3 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-	2 Exhibit)		DATE February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604641A Tact (TUGV)	Tactical Ur	PE NUMBER AND TITLE 0604641A Tactical Unmanned Ground Vehicle (TUGV)	d Vehicle	PROJECT DE47
B. Program Change Summary  FY 1994  Previous President's Budget  Appropriated Value  Adjustments to Amropriated Value	FY 1995	EY 1996	F <u>Y 1997</u> 1492		
Current Budget Submit/President's Budget  C. Other Program Funding Summary. This program is OSD funded through Milestone II which is scheduled for 3rd quarter FY 97. Service funding, Army and	ilestone II which	is scheduled for	1493	Service funding , Arn	ny and
D. Schedule Profile	A THE COMMING			ii	
FY 1994  USMC Mission Need Statement Complete TUGV Baseline Cost Estimate Update TUGV Best Technical Approach Complete Cost and Oper. Effect. Analysis Approved JORD Milestone I Initiate User Appraisals Begin Developmental Test & Evaluation Develop EMD Request for Proposal (RFP) Release EMD RFP Initiate EMD Source Selection Milestone II	FY 1995 X X	<b>→</b> ×	FY 1996 2 3 4	FY 1997 1 2 3	4 ×
Pase	Page 2 of 3 Pages			Exhibit R-2	6
	670				item 79

Item 79

RD.	RDT&E PROGRAM ELEMENT	RAM ELE		JECT (	SOST BI	PROJECT COST BREAKDOWN (R-3)	WN (R-	<u>@</u>	DATE	February 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	ig And Manu	facturing l	Development		PE NUMBER AND 0604641A (TUGV)	PE NUMBER AND TITLE 0604641A Tactic (TUGV)	al Unmar	Tactical Unmanned Ground Vehicle	ind Vehicl		PROJECT DE47
A. Project Cost Breakdown	reakdown										
Government Engineering Support Program Management Support Total	ecring Support ent Support			FY 1994		FY 1995	FY 1996	FY 1997 1492 1493 2985	2 3 5 7		
B. Budzet Acquisition History and Planning Information	ition History and	1 Planning Inf	<u>formation</u>								
Performing Organizations	izations								,		
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations MICOM RDEC	nt Organizations								1492	ပ	S
KSA, AL Support and Management Organizations UGV/S IPO	ement Organizati	ions							5	C	(
RSA, AL Test and Evaluation Organizations	1 Organizations								1493	ر	<b>.</b>
				Page	Page 3 of 3 Pages	6			Exhibit R-3	ຄະ	

671

Item 79

RDT&E BUDGET ITEM JU	EM JUS	STIFICATION SHEET (R-2 Exhibit)	TION SE	IEET (R	-2 Exhib	oit)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develops	Jevelopn	ment	PE NI 060	PE NUMBER AND TITLE 0604642A Ligh	E NUMBER AND TITLE 3604642A Light Tactical Wheeled Vehicles	tical Who	seled Vel	nicles		PROJECT DE41
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
DE41 Armored Security Vehicle (ASV)	0	0	2187	968	0	0	0	0	0	0

A. Mission Description and Budget Item Justification

This PE supports all Light Tactical Wheeled Vehicles such as the High Mobility Multi-purpose Wheeled Vehicle (HMMWV), Commercial Utility Cargo Vehicle (CUCV) and the Armored Security Vehicle (ASV). Currently DE41 (ASV) is the only project in development.

by recen. humanitarian missions such as Operation Restore Hope in Somalia and conflict in Bosnia. There is no other comparable system in the inventory which offers the Project DE41 - Armored Security Vehicle (ASV). The ASV is a turreted, lightly armored all-wheel drive combat support vehicle which will provide essential protection ASV is required to provide improved ballistics protection, increased payload and NBC protection to the MP teams. The need for such a wheeled vehicle was highlighted to selected Miliary Police units in highly exposed threat environments. The Military Police (MP) currently use the High Mobility Multipurpose Wheeled Vehicle. The ballistic protection, transportability and mobility of the ASV. This project supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is therefore placed in Budget Activity 5.

FY94 Accomplishments: Program not funded in FY 94

## FY 95 Planned Program

- Program not funded under this PE
  - Funded under PE 064328D
- Funded by OSD Initiate Source Selection Evaluation Board (350)
- Funded by OSD Award contract(s) for hardware demonstration vehicles (3111)

## FY 96 Planned Program

- Pre-Production Qualification Test (PPQT) (1789)
  - Government Engineering Support (200)
    - Technical and Logistics Data (198)

## FY 97 Planned Program

- Governmen Engineering Support (200)
  - Technical and Logistics Data (696)

Page I of 3 Pages 672

Exhibit R-2

Item 80

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ITEM JUST	FICATION	ON SHE	ET (R-2	Exhibit			DATE Fet	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ng Developm	ent	PE NU	PE NUMBER AND TITLE 0604642A Ligh	गाह ight Tact	ਮਾਸਦ Light Tactical Wheeled Vehicles	eled Ver	•	£ 0	PROJECT <b>DE41</b>
B. Program Change Summary Previous President's Budget Appropriated Value Adjustments to Appropriated Value Current Budget Submit/President's Budget		FY 1994 0 0		FY 1995 3479 0	FY 1996 910 2187	FY 1997 0 896	<i>L</i> 10 9			
C. Other Program Funding Summary OPA1 Armored Security Vehicle (D02800) OPA4 Initial Spares (PEO Other) (DS1030)	FY 1994	FY 1995	FY 1996	FY 1997 9609 99	FY 1998 10361 111	FY 1999 9670 101	FY 2000 7691 85	FY 2001	To	Total Cost 37331 396
D. Schedule Profile Release Draft Specification Release Draft RFP Release RFP Source Selection Evaluation R&D Contract Award PPQT Testing Release Production RFP Production Contract Award Milestone III Decision	FY 1994 1 2 3 X•	<b>▼</b> *	- X	FY 1995 X X X	- → ×	FY 1996	ბ w ⊀ X	_	FY 1997 2 3	4 ××
			Pare 2 of 3 Pares	Papes				Exhibit R-2	21	

Item 80

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT COS	T BREAKD	OWN (R-3)		DATE Fabriary 1995	1995
BUDGET ACTIVITY 5 - ☑ngineering And Manufacturing Development	PE 1	PENUMBER AND TITLE 0604642A Light Tactical Wheeled Vehicles	t Tactical Wi	neeled Veh		PROJECT DE41
A. Project Cost Breakdown  Product Development Test and Evaluation In-House/Govt Engineering Total	FY 1994	FY 1995	FY 1996 198 1789 200 7.187	FY 1997 696 200 896		
B. Budget Acquisition History and Planning Information: Not Applicable	cable					
	674 UNCLASSIFIED	4 SIFIED				Item 80

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SOF WE	<b>TIFICAT</b>	HS NOI	IEET (R.	-2 Exhib	it)		DATE <b>Fet</b>	February 1995	95
8ubG <b>5 - E</b>	BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	evelopm	ent	PE NU 060 Enç	PE NUMBER AND TITLE 0604645A Arme Engr Dev	PENUMBER AND TITLE 0604645A Armored Systems Modernization (ASM)- Engr Dev	Systems	Moderni:	zation (A	SM)-	
	COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	89489	62287	38465	20744	14872	8119	333959	518677	Continuing	Continuing
0175	D175 Advanced Field Artiflery System Mulit Option Fuse	7815	6240	6388	9969	0	4379	0	0	0	41546
D2AT	D2AT AGS Operational Test	0	2909	0	0	0	0	0	0	0	2809
D2KT	D2KT Advanced Field Artillery System Operational Test	0	0	0	0	0	3740	1220	100	Continuing	Continuing
D413	D413 Armored Gun System	81874	53118	32077	13779	14872	0	0	0	0	305060
D417	Advanced Field Artillery System - Engineering Development	0	0	0	0	0	0	202841	332217	Continuing	Continuing
D418	D418 Field Artillery Resupply Vehicle - Engineering Development	0	0	0	0	0	0	129696	186360	Continuing	Continuing

efforts for the Armored Gun System, the Advanced Field Artillery System (AFAS), Field Artillery Resupply Vehicle and the Advanced field Artillery System Multi-Option Fuse for Artillery (MOFA). The projects in this program element support research efforts in the engineering and manufacturing development phases of the acquisition A. Mission Description and Budget Item Justification: This Program Element supports the Engineering and Manufacturing Development and Operational Testing strategy and are therefore correctly placed in Budget Activity 5.

phase of MOFA. MOFA will provide proximity, time delay and point detonation functions for 105mm, 155mm and 8 inch bursting projectiles. MOFA will be inductively utilization and integration of advanced technology in its subsystems and combat components. This project finances the Engineering and Manufacturing Development Project D175 - Advanced Field Artillery System Multi-Option Fuse: The Advanced Field Artillery System (AFAS) is the Army's next generation 155mm selfpropelled howitzer system that will provide a significant increase in artillery survivability, lethality, mobility and operational capability and effectiveness through (or manually) set contributing to AFAS's critical automated animunition handling capability, allowing AFAS to meet extended range (40-50km), rate of fire (12 rounds/min.), and autonomous operations requirements.

## FY94 Accomplishments:

- Electronics Manufacturing Development & Fuze Setting Verification (6600)
  - Program Management, Management Engineering Services (763)

Exhibit R-2

Item 81

Page I of 14 Pages

RDT&E BUDGET ITEM JUSTIFICATIO	STIFICATION SHEET (R-2 Exhibit) Febru	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604645A Armored Systems Modernization (ASM)-	
	Engr Dev	•
• Full Function System Test, High "G" Survivability Test (252)		

## FY 95 Planned Program:

- Baseline Design, Producibility Maturation, Electronics Prove-Out (4679)
  - Program Management, Management Engineering Services (830)
    - Subsystem testing(600)
- SBIR/STTR (131)

## FY 96 Planned Program:

- End of Development Review, System Integration Prove-out (4667)
- Program Management, Management Engineering Services (608)
- Qualification Testing/Developmental and Operational Testing (1113)

## FY 97 Planned Program:

- Critical Design Review, Production Readiness Review (4865)
- Program Management, Management Engineering Services (600)
- Developmental and Operational Testing, Completion Qualification Testing (1500)

trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of the effectiveness and suitability of the system. Project D2AT Evaluation Command (OPTEC). Operational testing is conducted under conditions, as close as possible, to those encountered in actual combat with typical user troops Project D2AT - AGS Operational Test: The AGS is an Acquisition Category II system with a dedicated Early User Test and Experimentation (EUTE) to support an LRIP decision in FY 95. This project finances the direct costs of planning and conducting operational testing and evaluation of the AGS by the Operational Test and is not a new start; it represents test funds previously budgeted in PE 0605712, Support of Operational Testing, Project D001, OPTEC Initial Operational Test and Evaluation (IOTE).

FY 94 Planned Program: Program is unfunded for FY 1994

## FY 95 Planned Program:

Early User Test (2909)

FY 96 Planned Program: Program is unfunded for FY 1996

Page 2 of 14 Pages

vhihit P.2

RDT&E BUDGET ITEM J	USTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM)-Engr Dev	ization (ASM)-

FY 97 Planned Program: Program is unfunded for FY 1997

operations; therefore it must be capable of insertion via low velocity air drop (LVAD) and execute forced entry operations. Its role is to support infantry units in direct fire response to Congressional concern regarding concurrency between test and production. The restructured strategy virtually eliminates any overlap between these efforts. The AGS will support light infantry forces in consive and defensive operations, low and mid intensity conflicts. The AGS will be employed during contingency force Project D413 - AGS: The Armored Gun System (AGS) is a strategically deployable, tactically transportable, lightly armored, highly mobil, direct fire weapon system. with autoloader, 3 man crew, fire control equivalent to M1 and mobility with Level III armor greater than the M551 Sheridan. The AGS program was restructured in capabilities include C-130 I.VAD (Level I Armor), Roll-on/Roll-off C130/C141 (Level II Armor), Roll-on/Roll-off C-17 (Level III Armor), 105mm main gun (XM35) mode for point fire target destruction, generally against bunkers, threat medium armor systems, buildings, and in Military Operations in Urban Terrain. System

## FY94 Accomplishments:

- Continued EMD (73171)
- Completed BSS Testing (329)
- Initiated Vulnerability Testing (350)
- Continued Technical T :sting (2424)
- Project Management (\$\infty\$00)

#### FY 95 Planned Program

- Continue EMD (41037)
- Complete Vulnerability Testing (2000)
  - Continue Technical Testing (4576)
    - Project Management (4422)
- SBIR/STTR (1083)

## FY 96 Planned Program:

- Continue EMD (22316)
- Continue Technical Testing (2090)
- Begin Live Fire Testing (4800)
  - Project Management (2871)

## FY 97 Planned Program:

Continue EMD (8405)

Page 3 of 14 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2	Exhibit)	DATE	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604645A Armo	ITLE Armored Sys	PENUMBER AND TITLE 0604645A Armored Systems Modernization (ASM)-Engr Dev	ASM)-
<ul> <li>Complete Technical Testing (109)</li> <li>Continue Live Fire Testing (200)</li> <li>Project Management (1154)</li> <li>Begin ESLRF/DTV Development (3911)</li> </ul>				
B. Program Change Summary Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SBIR Decrease (-1964)	EX 1995 \$1097 62267	EY 1996 20948	EY 1997 23069	
c. Reprogram from D280 (+1178) Current Budget Submit/Fresident's Budget	62267	38465	20744	
Change Summary Explanation:  Project D413 - AGS  Funding: The change in FY 96 funding is due to restructuring of the program as indicated in the schedule comments below. The significant difference is f funding for Operational Testing and Live Fire Testing in FY 96 vs. FY 97.  Schedule: LRIP delayed from FY 95 until FY 96. Three year LRIP compressed into one, MS III accelerated from Apr 99 to Mar 97. Production contract award moved up to April 97. IOTE and Live Fire tests accelerated from FY 97 into FY 96.  Technical: None.	rogram as indicated 96 vs. FY 97. pressed into one, N from FY 97 into FY	in the schedule of III accelerated (	comments below. The signific from Apr 99 to Mar 97. Prod	ant difference is f duction contract award
Project D175 - MOFA EMD  Funding: Reprogramming from PE 634645/D409 in FY 96 and FY 97 required to maintain continuity between MOFA development and production phases and support AFAS/FARV Development Phases I & II test requirements.  Schedule: One year push-out of MSIII IPR and Type Classification from 2QFY96 to 2QFY97.  Technical: None	required to maintaii ments. 1 2QFY96 to 2QFY	n continuity betw 97.	æn MOFA development and p	production phases and
Page	Pare 4 of 14 Pares		Exhibit R-2	?-2
	678			Item 81

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATION	ON SHE	ET (R-2	Exhibit			DATE Fel	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Jevelopmo	ent	PE NL 060 Eng	PE NUMBER AND TITLE  0604645A Armored Systems Modernization (ASM)- Engr Dev	ITLE Irmored !	Systems	Moderni:	zation (A	l	PROJECT D175
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1.397 Extimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D175 Advanced Field Artillery System Mulit Option Fuse	7615	6240	8388	9962	0	4379	0	0	0	41546
C. Other Program Funding Summary RDTE, A Budget Activity 4 PE 6034645, Project D409 - AFAS	FY1994 76466	FY 1995 113129	FY 1996 130459	FY 1997 174342	FY 1998 218991	FY 1999 185407	FY 2000 28977	FY 2001	To Comp	<u>Ttl Cost</u> 1149650
Ammo, A Appropriation ER8017 MOFA Production						2000	33100	63700	265100	363900
D. Schedule Profile	FY 1994	4	 E -2	FY 1995 2 3	4	FY 1996	3 4		FY 1997	4
Acquisition Milestones (AM) Milestone III IPR/Type Classification	ı			1		ı				
AM - Hardware Delivery Engineering Milestones (EM)- Initiated	*								×	
T&E Milestones - Ballistic Testing FM - Task IV Start	×	×		<b>&gt;</b>						
EM - Complete Task III TAE Miletsones - Start of Development			×			×				
and Operational Test T&E Milestones - Hardware Prove-out			×	×		ł				
T&E Milestones - Baseline Design					×	×				
1 esung T&E Milestones - Pre-Qualitication Test FM - Complete Task 1V							× ×	×		
EM - Start Task V							×		;	
T&E Miletsones - Completion of  Development and Operational Test						×			<b>&lt;</b>	
			Page 5 of 14 Pages	4 Pages				Exhibit R-2	2	
										140.00.01

Item 81

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	PROJECT	COST BE	REAKDC	WN (R-3		DATE F	February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	nent	PE NUMBER AI 0604645A Engr Dev	PE NUMBER AND TITLE 0604645A Armoi Engr Dev	red Syster	DE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM)- Engr Dev	ization (.	ASM)-	Р <b>ROJECT</b> <b>D175</b>
A. Project Cost Breakdown	FY 1994		FY 1995	FY 1996	FY 1997			
Product Development	0099		4679	4667	4865			
Support and Management Test and Hydrothorica	763	<b>8</b> 5	830	608	99 5			
SIBR/STTR	7	7 0	131	0	0			
Total	7615	Ş	6240	6388	\$969			
B. Budget Acquisition History and Planning Information								
)rganiz								
Contractor of Contract Covernment Method/Type Award or Performing	Project	Total						
or Funding Obligation		Prior to					Budget to	Total
Activity Vehicle Date EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	되
t Development Organizations			.,,	0006	8006	000		
Alitant Crir May 92 18210 Tech Systems	19810	6/16	4941	3000	2005	3000		19/16
Hopkins, MN								
Raytheon/TI Joint SS-CPFF		1192	2%					1788
Ventures,								
I wespury, MA AMCCOM,		1749	1063	1679	1665	1865	4000	12021
ARDEC, Dover,								
NJ & Adelphi, MD								
Support and Management Organizations AMCCOM,		984	763	830	809	9	379	4164
ARDEC, Dover,								
NJ & Adelphi, MD								
Test and Evaluation Organizations		,						
TECOM, Yuma,		94	252	009	1113	1500		3559
AZ SBIR/STTB				131				121
Government Furnished Property: None								
	Pag	Page 6 of 14 Pages	Sä			Exhibit R-3	<b>-</b> -3	

089

Item 81

RDT&E PROGRAM ELEMENT/PROJECT	T COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604645A Arm	SA Armor	PENUMBER AND TITLE OGO4645A Armored Systems Modernization (ASM)-Engr Dev	ns Modern	nization (	ASM)-	
	Total Prior to	200	\$00 £ And	Š		Budget to	Total
Subtotal Product Development	8714	6600 6600	4679 4679	4667	4865	Complete 4000	33525
Subtotal Support and Management	984	763	830	809	9	379	4164
Subtotal Test and Evaluation Total Project	94	252	731	1113	1500	4379	3690
				·			
1	Page 7 of 14 Pages	ķ			Exhibit R-3	£.5	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUST	IFICATION	HS NO	EET (R-	2 Exhibit	<b>□</b>		DATE Fe	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	lent	06. En	PE NUMBER AND TITLE 0604645A Armo	PENUMBER AND TITLE 0604645A Armored Systems Modernization (ASM)- Engr Dev	Systems	Moderniz	zation (A	1	PROJECT D2AT
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2AT AGS Operational Test	0	2303	0	0	0	0	0	0	0	2909
C. Other Program Funding Summary: None										
D. Schedule Profile	FY 1994		- (	7 199	-	FY 1996			FY 1997	
Early User Test and Evaluation	7	2) 4	-	××	4	7	ε 4		3	4
			Doce Williams	D October 1				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	c	
			i ake o ol	14 1 0863					7-	
			607	,						Item 81

Item 81

ROTRE RUDGET ITEM INSTIFICATION SHEFT (R.2 Exhibit)	TSI II. M	FICATI	HS NO	FT (R.2	Exhibi			DATE	Cobmissy 1005	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
יון יון יון יון יון יון יון יון יון יון								E	oruary 12	50,00
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	9E NU 060 Eng	PE NUMBER AND TITLE 0604645A Armo Engr Dev	IITLE Irmored (	Armored Systems Modernization (ASM)-	Moderniz	zation (A		PROJECT D2KT
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2KT Advanced Field Artitlery System Operational Test	0	0	0	0	0	3740	1220	100	Continuing	Continuing
C. Other Program Funding Summary	FY 1994	FY 1995		FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total
RDTE, A Budget Activity 4 PE 0603645, Project D409 AFAS	76466		130459	174342	218991	185407	28977	0	0	1149088
D. Schedule Profile: Not Applicable										
			Page 9 of 14 Pages	4 Pages				Exhibit R-2	5	
			683							Item 81

UNCLASSIFIED

683

RDT&E BUDGET ITEM JUS	M JUST	FICATI	TIFICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibit			DATE FeI	February 1995	70
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ent	PENL 060 Eng	PE NUMBER AND TITLE 0604645A Arme	ITLE Armored	Armored Systems Modernization (ASM)-	Modemi	ration (A		PROJECT D413
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
D413 Amored Gun System	81874	53118	32077	13779	14872	0	0	0	0	305060
C. Other Program Funding Summary WTCV.A Annountiation	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total Cost
GZ2755 AGS Training Devices G82800 Armored Gun System GA0760 AGS Mods	8218		141551	182222	22786 154638 14331	8459 187733 66012	11640 186038 33080	167211 5076	214030 15600	42885 1233423 134099
	FY 1994	4	1 E 2	FY 1995 2 3	4	FY 1996	۵ د 4	-	FY 1997	•
Critical Design Review Prototype delivery Complete BSS Testing EUT&E Complete Vulnerability Testing IPR (LRIP Decision) Begin IOT&E Begin Live Fire Test Complete IOT&E Complete Live Fire Test Milestone III (Full Production Decision)	<b>*</b>	*	×	××				× ×		
		B	Pape 10 of 14 Pages	Pages				Exhibit R-2		
			,							10

Item 81

RD1	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PR	I/PROJECT COST BREAKDOWN (R-3)	OST BF	REAKDO	WN (R-3		DATE Fe	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develor	g And Manu	facturing [	Development	*	PE NUMBER AND TITLE 0604645A Arme Engr Dev	RAND TITLE 5A Armor	ed Syster	Armored Systems Modernization (ASM)-	nization (A	1	PROJECT D413
A. Project Cost Breakdown	rakdown			FY 1994	Ę	FY 1995	FY 1996	FY 1997			
P. ototype Design, Manuf, & Support	fanuf, & Support	<b>د</b>		71568	1	31819	19719	9655			
XM35 Gun Design, Manuf & Support	Manuf & Suppo	Ĭ		2544		3788	1321	231			
Government Testing				3703		7606	7810	417			
Training Devices				1040		4168	125	689			
Program Management	int			2803		4180	2707	842			
SIBR/STTR						1083					
Other Govt Support				216		474	395	1945			
Total				81874		53118	32077	13779			•
B. Budget Acquisition History and Planning Information	tion History and	d Planning Inf	ormation								
Performing Organizations	Costmi										
Contractor or											
Covernment	Method/Type		Performing	Project	Iotal						
Performing	or Funding	<b>Obligation</b>	Activity	Sigo	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	ent Organizatio	ins									•
United Defense LP	SS/CPIF	June 92	213480	213480	84827	71514	31679	19188	6272	0	213480
San Jose, CA											
SAAB Traing Sys	Œ	Sep 2	2006	2000	0	1000	4000	0	0	0	2000
Huskvarna, Swed						•					
Unknown	TBD	FY 98	Y/X	9575	0	0	0	0	0	9575	9575
Misc Govt Agcy	MIPR				4294	2106	4530	2855	803	570	15158
United Defense LP	TBD	FY 97		\$638					3911	1727	\$638
San Jose, CA											
Red River AD	MIPR	FY 97		4481					1481	3000	4481
Texarkarkana, TX											
SBIR/STTR	TBD	FY 95					1083			0	1083
Support and Management Organizations	gement Organi:	zations									
PM AGS	MIPR				4121	2023	2407	1800	800	0	111151
Warren, MI											
Miscellaneous	MIPR				1345	201	377	112	95	0	2130
				Page	Page 11 of 14 Pages	sə.			Exhibit R-3	-3	
											Item 81
					685						10 111211

RDT&E PR	OGRAM E	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT	COSTB	REAKDO	WN (R.	<b>∞</b>	DATE F.	February 1995	95
BUDGET ACTIVITY 5 - Er gineering And Manufacturing Development	lanufacturin	g Developmen	±	PE NUMBER AI 0604645A Engr Dev	PE NUMBER AND TITLE 0604645A Armor Engr Dev	ed Syste	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM)-Engr Dev	nization (	ASM)-	
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	Type Award or ng Obligation Date	Performing n Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Test an 1 Evaluation Organizations CSTA APG, MD MIPR Misc Govt Agcy MIPR	ations			700 386	2871 802	5635 1971	5748 2062	200	0	15154
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle	erty Type Award or ng Obligation Date	n Delivery <u>Date</u>		Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to <u>Complete</u>	Total Program
Product Development Property XM35 Gun MIPR Support and Management Property XM35 Gun MIPR	ty Aug 91 operty	Nov 92		10943	125	744	72			3113
Test and Evaluation Property XM35 Gun MIPR	<b>.</b>			1053	909	692	240			2591
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	nent			Total Prior to FY 1994 100064 7137 2139	FY 1994 74745 2850 4279 81874	FY 1995 41292 3528 8298 53118	EY 1996 22043 1984 8050 32077	EY 1997 12467 895 417 13779	Budget to Complete 14872	Total Program 265483 16394 23183
			Page	Page 12 of 14 Pages	ક્ટ			Exhibit R-3	č.3	
				707						frem 81

989

Item 81

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	IFICATI	ON SHE	EET (R-1	Exhibi	t)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ent	PE N 06(	PENUMBER AND TITLE 0604645A Armored Systems Modernization (ASM)-Engr Dev	ritle <b>\rmored</b>	Systems	Moderni	zation (A	l	PROJECT <b>D417</b>
COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D417 Advanced Fleid Artiflery System - Engineering Development	0	0	0	0	0	0	202841	332217	Continuing	Continuing
C. Other Program Funding Summary RD TE, A Budget Activity 4 PE 0603645A, Project D409 AFAS	EY 1994 76466	EY 1995 113129	EY 1996 130459	EY 1997 174342	EY 1998 218991	FY 1999 185407	FY 2000 28977	FY 2001	To Compl 0	Total Cost 1149088
D. Schedule Profile: Not Applicable										
			Page 13 of 14 Pages	14 Pages				Exhibit R-2	8	

		ğ	Ming	Total Cost 6811		 		-	<del></del>
DATE February 1995	PROJECT D418	Total Cost	Continuing	Total C:st 486811					
		Coet to Complete	Continuing	To Compl 0					
		FY 2001 Estimate	186360	EY 2001					
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	Moderniz	FY 2000 Estimate	129836	EY 2000 15987					
	PE NUMBER AND TITLE 0604645A Armored Systems Modernization (ASM)- Engr Dev	FY 1999 Estimate	0	EY 1999 122952					
		FY 1996 Estimate	0	EY 1998 118603					
	PE NUMBER AND TITLE 0604645A Arme	FY 1997 Estimate	o	EV 1997 93543					
	PE NU 060 Enç	FY 1996 Estimate	0	EY 1996 71054					
	evelopment	FY 1995 Estimate	0	EY 1995 21563					
		FY 1994 Actual	0	EY 1994 23864					
	вирсет Астімту 5 - Engineering And Manufacturing Development	COST (in Thousands)	D418 Field Antillery Resupply Vehicle - Engineering Development	C. Other Program Funding Summary RDTE A, Budget Activity 4 PE 0603645A, Project DB88 FARV	D. <u>Schedule Profile</u> : Not Applicable				

Page 14 of 14 Pages

Exhibit R-2

Item 81

889

RDT&E BUDGET ITEM JI	GET ITE	SUL M	<b>TIFICAT</b>	HS NOI	EET (R	USTIFICATION SHEET (R-2 Exhibit)	it)		DATE FeI	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	cturing De	velopm	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604649A Engi Development	re number and title 0604649A Engineer Mobility Equipment Development	Mobility	Equipme	int		
COST (in Thousends)		FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Coat		16240	12108	21389	14384	18350	10610	0	0	0	103090
DG25 M1 Breacher		0	0	10918	13275	7908	10610	0	0	0	42711
DG26 Heavy Assault Bridge (HAB)		16240	12108	10471	1109	10442	0	0	0	0	60379

forces supported. Two projects are included in the PE; both are Operation Desert Storm initiatives. The two projects are the M1 Breacher and the Heavy Assault Bridge (HAB). The base for both vehicles is an M1 Abrams Tank chassis. The M1 Breacher will integrate on the chassis a versatile/survivable full-width mine clearing blade A. Mission Description and Budret Item Jurtification

This Program Element (PE) supports the development of new, advanced combat engineer systems that will have mobility characteristics comparable to the maneuver with automatic depth control, a power driven excavating arm, and an armored commander's control station. The HAB will integrate a bridge capable of supporting Military Load Class (MLC) 70 ton loads and a launching mechanism. Both projects in this PE support research efforts in the Engineering and Manufacturing Development (EMD) phase of the life cycle acquisition strategy, and are correctly located in Budget Activity #5

Project DG25 - M1 Breacher: The M1 Breacher will provide the Combat Engineer with significantly improved mission effectiveness and crew/vehicle survivability while clearing mirefields and removing complex natural and man-made obstacles at the forward edge of the battlefield. The M1 Breacher will be capable of moving with, and be as survivable as, the force it is supporting. It will provide the maneuver force with the freedom required to successfully execute assigned ground combat mission requirements

# FY 1996 Planned Program:

- Award Breacher EMD contract (600).
- Provide government management oversight (983).
- Finish design refinement and continue with logistics development efforts (7836).
- Begin Pre-Production Qualification Test (PPQT) (1499).

Page 1 of 10 Pages

Exhibit R-2

Exhibit) DATE February 1995		0604649A Engineer Mobility Equipment		
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	BUDGET ACTIVITY PE NUMBER AND TITLE	5 - Engineering And Manufacturing Development 0604649A E	Development	

# FY 1997 Planned Program:

- Complete PPQT 1/conduct Limited User Test (908).
- Begin validation of manufacturing facilities, processes and procedures; prototype repair and modification (10551).
  - Begin PPQT II (1816).

will be a total of ten minutes or less which includes five minutes to engage plus five minutes to place the vehicle in a travel mode. The base for the HAB is an M1 Abrains HAB will have mobility characteristics comparable to the maneuver forces it will support. The launch time for the bridge will be five minutes or less, the retrieve time Project DG26 - Heavy Assault Bridge: The HAB will provide Military Load Class (MLC) 70 vehicles the capability to cross 24-meter gaps (26-meter bridge). The Tank chassis.

### FY 1994 Accomplishments:

- Award EMD Phase II contract: conduct System Requirement Review (SRR) and Preliminary Design Review (PDR), buy test hardware and GFE (14043).
  - Program Management; complete source selection, review SRR and PDR, matrix support (2097).
    - Systems Engineering Analysis Award (100).

# FY 1995 Planned Program:

- EMD Phase II contract; conduct CDR, start/complete integration and prototype build, start contract checkout testing and buy GFE (9258).
  - Program Management; review CDR, program review, matrix st. pport and prepare Request For Proposal (RFP) for 4 test vehicles (2588).
    - SBIR/STTR (260)

# FY 1996 Planned Program:

- EMD Phase II contract; complete contract testing and support G-vernment testing (6327).
  - Award of Environmental Study (250).
- Program Management; conduct LD, start PPQT/EUTE (3894).

# FY 1997 Planned Program:

- Program Management; complete PPQT/EUTE (384).
  - Completion of EMD II contract (725)

Page 2 of 10 Pages

Exhibit R-2

Item 82

RDT&E BUDGET ITEM JUSTIFICA	STIFICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibit)		DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	DEN DEN Dev	PE NUMBER AND TITLE 0604649A Engi Development	ngineer Mo t	PE NUMBER AND TITLE  0604649A Engineer Mobility Equipment  Development	
B. Program Change Summary					
. Budget	EX 1994 EX 13304 1	EY 1995 16865	FY 1996 25239	FY 1997 10944	
Appropriated value Adjustments to Appropriated Value a. SIBR/STTR/Consulting Serv decrement/Other b. Reprogrammed into PE Current Budget Submit/President's Budget		12106	21389	14384	
Change Summary Explanation:					
Project DG25 - M1 Breacher Development Funding: None. Schedule: Schedule slip in Advanced Development has delayed start of EMD into FY 96. Technical: None	of EMD into FY	<b>%</b>			
Project DG26 - Heavy Assault Bridge Funding: None. Schedule: None Technical: None					

Page 3 of 10 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUS	M JUSTI	FICATION	ON SHE	TIFICATION SHEET (R-2 Exhibit)	Exhibit			DATE Fet	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ent	PE NI 060 Dev	PE NUMBER AND TITLE  0604649A Engineer Mobility Equipment Development	itle ingineer l	Mobility I	Equipme	nt	g O	Р <b>R</b> ОЈЕСТ <b>DG25</b>
COST (in Thousends)	FY 1994 Actual	FY 1995 Eathmate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
DG25 M1 Breacher	0	0	10018	13275	7908	10610	0	0	0	42711
C. Other Program Funding Summary			i							
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
PE 0603649A Project DG24 M1 Breacher AD	29070	15726	\$615							64794
PA, WTCV GZ3200 (Breacher MOD)				74822	93228	66696	120228	130440	Cont'd	Cont'd
PA, WTCV GEO175 Breacher (Spares)					1014	1216	2405	2229	Cont'd	Cont'd
D. Schedule Profile										
-	FY 1994 2 3	4	1 2	FY 1995 2 3	4	FY 1996 2 3	δε. 4	_	FY 1997 2 3	4
Conduct Critical Design Review (CDR) X*  Begin Development and Early User				•	×					
Conduct Milestone II Review Award Engineering and Manufacturing						××				
Development (EMD) Contract Conduct Low Rate Initial Production									×	
(LRIP) In-Process Review (IPR)  Award LRIP Contract								•	×	
			Page 4 of 10 Pages	0 Pages				Exhibit R-2	2	
			692							Item 82

RDT&E PROGRAM ELEMENT	OGRAM EL		PROJECT (	SOST BE	COST BREAKDOWN (R-3)	WN (R-3		DATE F8	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	anufacturing	Developmen	<b>t</b>	PE NUMBER AND TITLE 0604649A Engi	AND TITLE  A Engine  ment	er Mobili	PENUMBER AND TITLE 0604649A Engineer Mobility Equioment Development	ent	R O	PROJECT DG25
A. Project Cost Breakdown			FY 1994		FY 1995	FY 1996	FY 1997			
Development Engineering Logistics Support System Test & Evaluation System Project Management Total						6127 1709 1499 1583	2578 2724 2724 239 13275			
B. Budget Acquisition History and Planning Information	y and Planning	<u>Information</u>								
Performing Organizations										
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	Type Award or ng Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	EY 1996	FY 1997	Budget to Complete	Fotal Program
Product Development Organizations United Defense SS-CPIF	ations Mar 96	Ϋ́	26762	0	0	0	6836	10312	9614	26762
York, FA Support and Management Organizations TACOM	anizations						1312	239	529	2080
Warren, MI ANAD									2909	2909
Anniston, AL Other Gov't							271			271
Agencies Test and Evaluation Organizations TECOM	tions						1499	2724	5466	6896
AFG, MD			Pag	Page 5 of 10 Pages	sə			Exhibit R-3	2-3	
				693						Item 82

663

RD	T&E PROG	RAM ELI	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT COST B	REAKDC	WN (R-3		DATE	Eobnish, 400E	305
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ig And Manu	facturing	Development	PE NUMBER AND TIT 0604649A En Development	PE NUMBER AND TITLE 0604649A Engin Development	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	ty Equipn		ebidary .	PROJECT DG25
Government Furnished Property	ished Property									
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery <u>Date</u>	Total Prior to FY 1994	FY 1994	FY 1995	FY 19%	FY 1997	Budget to Complete	Total
Product Development Property Hardware - Armor 1095	int Property 1095	Mar 96	76 unf				1000			1000
Support and Management Property	gement Property									
Test and Evaluation Property	n Property									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	evelopment id Management valuation			Total Prior to FY 1994	FY 1994	FY 1995	FY 1996 7836 1583 1499 10918	EY 1997 10312 239 2724 13275	Budget to  Complete 9614 3438 5466 18518	Total Program 27762 5260 9689 42711
		ļ		Page 6 of 10 Pages	بي			H H H H H H H H H H H H H H H H H H H	ç	
				694					2	Item 82

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION	M JUST	FICATI	ON SHE	ET (R-2	SHEET (R-2 Exhibit)			DATE Fe	February 1995	965
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604649A Engi	TITLE Engineer Mobility Equipment ent	Mobility	Equipme		a 0	PROJECT DG26
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DG26 Heavy Assault Bridge (HAB)	16240	12106	10471	1109	10442	0	0	0	0	60379
C. Other Program Funding Summary										
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total
PA, WTCV GZ3250 (HAB MOD)			15095	47018	42071	63913	83935	117685	Cont'd	Cont'd
PA, WTCV GE0177 HAB (Spares)					1014	1021	1655	1757	Cont'd	Cont'd
D. Schedule Profile										
Contract Selection IPR	FY 1994 2 3 X*	4	1 2	FY 1995 2 3	4	FY 1996 2 3	3 4		FY 1997 2 3	4
Begin PPQT/EUTE testing Award of 3 LRIP Test Vehicles End PPQT/EUTE Testing LRIP Contract Award	<b>.</b>						××	×	×	
									!	
			Page 7 of 10 Pages	) Pages				Exhibit R-2	2	

RDT&E PROGRAM ELEMENT/PROJE	I/PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-3)	DATE	February 1998	
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TIT 0604649A En Development	PE NUMBER AND TITLE 0604649A Engine Development	ser Mobility	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	PROJECT DG26	
A. Project Cost Breakdown						
Development Engineering Logistics Support	EX 1994 EX 13168	EY 1995 8616 643	EY 1996 6134	EY 1997 674		
System Test & Evaluation System Project Management		2588	1542 2352	384		
Total	16240 1	260 12106	10471	1109		
	Page 8 of 10 Pages	<b>9</b>		ָּהָ אָרְ אָרָ אָרָ אָרָ אָרָ אָרָ אָרָ אָר		
	969				Item 82	82

RDT	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PR	I/PROJECT (	COST BF	REAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	g And Manu	facturing (	Development		PE NUMBER AND TITLE 0604649A Engi	AND TITLE  A Engin	eer Mobili	TITLE Engineer Mobility Equipment		ā <b>0</b>	PROJECT DG26
B. Budget Acquisition History and Planning Information	tion History and	Planning Inf	ormation								
Performing Organizations	izations										
Contractor or Government	Coutract Method/Type	Award or	Performing	Project	Total						
Performing Activity	or Funding Vehicle	Obligation Date	Activity EAC	EAC	Prior to EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations	nt Organizations		į								
Gen Dyn Land Sys Sterling Hots, MI	C-CPAF	Jan 94	<b>V</b> N	32103	0	13932	9166	6877	725		30400
Gen Dyn Land Sys	SS-CPFF	Jan 98	NA	NA						4622	4622
Skering right, Mu SMS Corp	SS-FFP	May 92	Y <sub>N</sub>	<b>A</b> N	\$798						5798
Other Contracts	Various	٧X	NA A	٧X	432	100					532
Support and Management Organizations	ement Organizati	ions				•	•				i i
ANAD					360	1404 21	30	7107		1542	1953
Anniston, AL Other Gov't					8	403	210	745			1634
Agencies					3			Ç.			
Other							260				260
Test and Evaluation Organizations	Organizations										
TECOM					488	80	82	1492	384	4278	6804
WSMR							205				205
White Sands, NM											
				•	•				:		
				198	rage y of 10 Pages	Si			EXUIDIT K-3	3	
					269						Item 82

RDT&E PROGRAM ELEMENT	SRAM EL	EMENT/PROJEC	PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-		DATE		
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ufacturing	Development	PE NUMBER AND TIT 0604649A En Development	PE NUMBER AND TITLE 0604649A Engin Development	PE NUMBER AND TITLE 0604649A Engineer Mobility Equipment Development	ity Equipr		PROJE	PROJECT DG26
Government Furnished Property									
Contract Method/Type Item or Funding Description Vehicle	Award or Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	EY 1997	Budget to Complete	Total
Product Development Property Various Gov't MIPR Sources Support and Management Property	Various	Various	157	110	92				359
Test and Evaluation Property To Be Determined MIPR	Apr 96	96 nn/				20			20
Subtotal Product Development Subtoral Support and Management Subtotal Test and Evaluation Total Project			Total Prior to EY 1994 6387 3136 488 10011	EV 1994 14142 2018 80 16240	EY 1995 9258 2561 287 12106	FY 1996 6577 2352 1542 10471	FY 1997 725 384 1109	Budget to Complete 4622 1542 4278 10442	Total Program 41711 11609 7059 60379
			Page 10 of 10 Pages	ž.			, id	S	
			869					2	Item 82

	RDT&E BUDGET ITEM JI	M JUST	IFICATI	ON SHE	EET (R-:	USTIFICATION SHEET (R-2 EXHIBIT)	IT)		DATE F.3	F bruary 1995	95
800GE 5 - E	BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel	evelopment	ent	PE NU 060	PE NUMBER AND TITLE 0604710A Nigh	irte <b>ight Visi</b>	on Syste	PENUMBER AND TITLE OCO Systems Engr Dev	Dev		
	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	41328	42803	39697	38286	22862	21487	18746	3036.1	Continuing	Continuing
5970	DL69 Hortzontal Technology Integration Second Generation FLIR (HTI SGF)	13979	24924	28387	23408	4024	0	0	7	0	95720
DL70	DL70 Night Vision Devices Engineering Development	27349	17879	10310	12904	11665	16844	18746	30364	Continuing	Continuing
DL74	DL74 Long Range Advanced Scout Surveillance System (LRAS3)	0	0	0	2965	7263	4843	0	С	0	14891

A. Mission Description and Budget Item Justification. This program element provides night vision technologies required for US defense forces to engage enemy forces soldiers. Project DL74 focuses on a long range multi sensor system utilizing Horizontal Technology Integration Second Generation FLIR (HTI SGP) thermal sensors and other technologies, for use by US Army scouts. These projects in PE 0604710A support research efforts in the engineering and manufacturing development phases of the twenty four hours a day under conditions with degraded visibility due to darkness, adverse weather and battlefield obscurants. Developments and inprovements to high inserting key thermal sensor technology into common battle groups. Project DL70 focuses on a variety of night vision electro-optical equipment for use by individual identification, acquisition and engagement as well as improve battlefield command and control in "around the clock" combat operations. Project D 69 is focused on performance night vision electro-optics, laser and thermal systems and systems integration of related multi sensor suites will enable near to long range target acquisition strategy and are therefore correctly placed in Budget Activity 5. Project DL69 - Horizontal Technology Integration Second Generation FLIR (HTI SGF) will enable the Army to insert key thermal sensor technology into the highest group to see the same thermal image. The HTI SGF development is in two parts, an "A" kit, which is specific to the vehicle, and includes integration and installation, and priority forces (the M8 Armored Gun System, the M2A3 Bradley Fighting Vehicle System and the M1 Abrams). The HTI SGF will allow all vehicles in a common battle a "B" kit, which includes the common Forward Looking Infrared (FLIR) sensor and display. Funds in this project will develop the "B" kit.

# FY 1994 Accomplishments:

- Prepared and conducted Source Selection for HTI SGF (2738)
- Milestone I/II ASARC (250)
- Awarded Producibility Contracts for key components and critical technologies (1973)
- Awarded E&MD contract for platform integration efforts (953)
  - Awarded E&MD contracts for FLIR systems (8065)

Page I of 13 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
8-UDGET ACTIVITY 5 - Engineering And Manufacturing Development 6 - Engineering And Manufacturing Development	
<ul> <li>FY 1995 Planned Program:</li> <li>Develop and Fabricate E&amp;MD B kit prototypes and pilot line for HTI SGF (23201)</li> <li>Develop and test prototypes from producibility contracts (950)</li> <li>Initiate integration of prototype from producibility contracts into "B" kits (250)</li> <li>Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) Program (523)</li> </ul>	
<ul> <li>FY 1996 Planned Program:</li> <li>Continue development, fabrication of B kit, integration kits and pilot line (25710)</li> <li>Complete integration of prototypes from producibility contracts (1700)</li> <li>Begin technical testing of E&amp;MD prototypes for HTI SGF (810)</li> <li>Qualification testing of E&amp;MD B kit prototypes (1167)</li> </ul>	
FY 1997 Planned Program:  Complete development and fabrication of "B" kit (22870)  Complete technical and user tests (286)  LRIP Decision for BFVA3 (250)	
Project DL70 - Night Vision Devices Engineering Development: This project develops and improves high performance night vision electro-optics, thermal and systems, and systems integration of related multi sensor suites to enable near to long range target acquisition and engagement as well as improve battlefield command and control in "sround the clock" combat operations. Near term systems in development are: Thermal Weapon Sight, (TWS) - a forward looking infrare. (FLR) used for surveillance and fire control with individual and crew served weapons. Laser Countermeasure System (LCMS) - a laser device for individual soldiers to stand off armored and aircraft optics. Compass/Vertical Angle Measure (C/VAM) for the Mini Eyesafe Laser Infrared Observation Set (MELIOS) - a system enhancement for scouts to accurately gather elevation and azimuth data in addition to MELIOS range data. Driver's Vision Enhancer (DVE) - a thermal imaging device used for driving Combat. Combat Service, and Combat Service Support vehicles and allows drivers to see obstacles through fog and battlefield obscurants. Lightweight Laser. Designator/Rangefinder (LLD/R) - a day/night manportable laser designator/rangefinder capable of designating vehicle targets out to 5km and rangin, targets out to 9995 meters and will process target location data for export through a digital interface. Objective Laser Countermeasure System (OLCMS) - a laser device that meets user's long range requirements for lighter weight, longer range and multi-spectral countermeasure capability.	electro-optics, thermal and laser improve battlefield command and oking infrare. (FLIR) used for idual soldiers to stand off armored em enhancement for scouts to device used for driving Combat, weight Laser mand ranging targets out to 9995 a laser device that meets user's
<ul> <li>FY 1994 Accomplishments:</li> <li>Started and completed testing of TWS (6982)</li> <li>Started testing of LCMS (7274)</li> <li>Developed E&amp;MD prototypes for DVE (11608)</li> <li>Completed C/VAM testing (100)</li> </ul>	

Item 83

Exhibit R-2

700 UNCLASSIFIED

Page 2 of 13 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604710A Night Vision Systems Engr Dev	Dev
<ul> <li>Provided support to Land Warrior program (1385)</li> </ul>		

# FY 1995 Planned Program:

- Complete testing of LCMS (2310)
- Fabricate E&MD prototypes for DVE; begin and complete testing (8924)
- Fund in-house E&MD effort for LLD/R (1556)
- Develop P31 Laser Rangefinder (LRF) for TWS (3364)
  - Provide support to Land Warrior program (1362)
    - SBIR/STTR (363)

# FY 1996 Planned Program:

- Develop E&MD prototypes for Objective LCMS (7389)
- Fabricate E&MD prototype for TWS P31 LRF for TWS (2424)
- Provide support to Land Warrior program (497)

# FY 1997 Planned Program:

- Complete development and fabricate E&MD prototypes for Objective LCMS (9144)
- Begin and complete testing of TWS P3I LRF (3318)
- Provide support to Land Warrior program (442)

Project DL74 - Long Range Advanced Scout Surveillance System (LRAS3): This project is a new start. It will develop the Long Range Advan ed Scout Surveillance System (LRAS3), which is a long range multi sensor system for US Army scouts which will provide the capability to detect, recognize, identify, range and designate potential targets. Currently, US Army scouts do not have the necessary equipment to perform these functions "around the clock". LRAS3 will utilize the HTI SGF thermal sensor and will enable scouts to function "around the clock" in adverse weather and through battlefield obscurants.

FY 1994 Accomplishments: Not Applicable

FY 1995 Planned Program: Not Applicable

FY 1995 Planned Program: Not Applicable

FY 1997 Planned Program:

Milestone I/II IPR (100)

Exhibit R-2

Page 3 of 13 Pages

RDT&E BUDGET ITEM JUSTIFICA	ATION	JSTIFICATION SHEET (R-2 Exhibit)	2 Exhibit)		DATE Fabriary 1995	
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604710.A Nigh	TITLE Night Vision	TITLE Night Vision Systems Engr Dev	1	
Conduct Source Selection Evaluation Board for LRAS3 (335)     Award E&MD contract for LRAS3 (2550)						
B. Program Change Summary						
Previous President's Budget Appropriated Value Adjustments to Appropriated Value	FY 1994 41361 41361 -33	FY 1995 43379 42803	39951	FY 1997 40077		
o DL70 (600) /President's Budget	41328	42803	39697	39295		
Change Summary Explanation:						
Project DL69 - Horizontal Technology Initiative Second Generation FLIR (HTI SGF) Funding: FY 1994 SBIR/STTR -220 Schedule: None Technical: None	in FLIR (H	T1 SGF)				
Project DL70 - Night Vision Devices Engineering Development Funding: Increased FY 1994 by 600, FY 1994 SBIR/STTR -413 Schedule: Delay start of Objective Laser Countermeasure System (OLCMS) by one year. Technical: None	H3 em (OLCM	S) by one year.				
	Page	Page 4 of 13 Pages			Exhibit R-2	5
		702			IICII	Item 83

Item 83

RDT&E BUDGET ITEM JUSTIFICATIO		N SHEET	(R-2 EXHIBIT	(HIBIT)				DATE Fet	February, 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develor	Jevelopm	pment	PE NU 060	PE NUMBER AND TITLE 0604710A. Nigh	Night Vision Systems Engr Dev	on Syste	ms Engr	1 1	<u>a</u> 0	PROJECT <b>DL 69</b>
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estituate	Cost to Complete	Total Cost
DL69 Hortzontal Technology Integration Second Generation FLIR (HTI SGF)	13979	24924	29367	23406	4024	0	0	c	0	95720
C. Other Program Funding Summary									Ĥ	- T
6.7 RDTE 0203735A, A Kit (related activity)	FY 1994 0	FY 1995 47393	FY 1996 37613	FY 1997 47879	FY 1998 4407	FY 1999	FY 2000	FY 2001	Compl	Cost 137292
WTCV G80717 M2A3 Bradley A and B Kit WTCV GA0700 M1 Abrams A and B Kit	00	00	00	20587	22219	29438	44608	31724	723228	871804
WTCV GA0750 Abrams Upgrade A and B Kit	. 0	0	0	<b>\$70\$</b>	62386	61497	58528	57240	1533431	1778787
WILY DAVIOUMS ALCO A and B Kit 0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	o portion of the d Gun Systen	HTI SGF d n. WTCV fi	U levelopment, unds the pro	o , and is brok duction tails	12142 en out to thr for A and B	>683/ ee distinct p kit product	2/608 projects: the ion for all th	0 M2A3 Bradl hree platforn	0 ley Fighting ns.	96607 Vehicle
D. Schedule Profile	FY 1994	4	- Fr <	FY 1995	4	FY 1996	% ~ 4	-	FY 1997	4
Milestone I/II ASARC B Kit E&MD Award Preliminary Design Review (PDR) Critical Design Review (CDR) Initiate Technical Testing Initiate Operational Testing Special In-Process Review (SIPR) Low Rate Initial Production M2A3	) 1		· *	× ×	•	× ×		•	×× ×	•
			Page 5 of 13 Pages	3 Pages				Exhibit R-2	2	

RDT	RDT&E PROGRAM ELEMENT	RAM ELE	EMENT/PR	I/PROJECT C	OST BF	COST BREAKDOWN (R-3)	WN (R-3		DATE	February 1995	395
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	) And Manu	facturing (	Development		PE NUMBER AND TITLE 0604710A Nigh	NAND TITLE	Vision Sy	PENUMBER AND TITLE OG04710A Night Vision Systems Engr Dev	l.		PROJECT DL69
A. Project Cost Breakdown Primary Hardware Development	cakdowa evelopment			FY 1994 7856		FY 1995 20268	FY 1996 25687	FY 1997 21406	<b>.</b> L.c		
Contractor Engineering Support Government Engineering Support Project Management Support Systems Engineering and Producibility SBIR/STTR	ing Support ering Support Support g and Producibili	<b>₹</b>		250 2496 451 2726 13979	•	2819 364 950 523 24924	1543 457 1700	1539	_		
B. Budret Acquisition History and Planning Information	ion Bistory and	Planning Inf	ormation								
Performing Organizations Contractor or Contra Government Metho Performing or Fur Activity Vehicle	zations Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to	FY 1994	FV 1995	<u>}</u>	FV 1997	Budget to	Total
Product Development Organizations Producibility Various	t Organizations Various	March	5576	5576	0	2926	950	1700	0	0	5576
Contracts Texas Instruments, McKinney, TX	C/CPAF	1994 7 July 1994	17741	77741	0	7856	20268	25687	21406	2524	77741
Support and Management Organizations Project Mgmt ASARC Support CECOM NVESD SBIR/STTR	ment Organizati	ions			0000	451 250 2496	364 0 2819 523	457 0 1543	461 0 1539	465 0 1035	2198 250 9432 523
Test and Evaluation Organizations	Organizations										
* All DT and OT are funded by PEO ASM in the platform funding line. All tests are at the vehicle level.	funded by PEO	ASM in the p	latform funding li	ine. All tests	are at the ve	hicle level.			! : :		•
				Page	Page 6 of 13 Pages	S			Exhibit R-3	-3	

Item 83

RDT&E PROGRAM ELEMENT	GRAM EL	PROJECT	COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE F	February, 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develop	ufacturing	Development	PENUMBER AND TITLE 0604710A Nigh	AND TITLE  A Night	PE NUMBER AND TITLE 0604710A Night Vision Systems Engr Dev	stems Eng	gr Dev	ā 🚨	PROJECT <b>DL69</b>
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle	/ e Award or Obligation <u>Date</u>	Delivery <u>Date</u>	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
Product Development Property None Support and Management Property None Test and Evaluation Property None	<b>&gt;</b>								
Subtotal Product Development Subtotal Support and Management			Total Prior to FY 1994	FY 1994 10782 3197	FY 1995 21218 3706	FY 1996 27387 2000	FY 1997 21406 2000	Budget to Complete 2524 1500	Total Program 83317 12403
Total Project				13979	24924	29387	23406	4024	95720
·									
		Pa	Page 7 of 13 Pages	Si			Exhibit R-3	<b>2-3</b>	

RDT&E BUDGET ITEM JUS	M JUST	FICATI	ON SHE	TIFICATION SHEET (R-2 Exhibit)	Exhibit			DATE		
BUDGET ACTIVITY			N 30	SENIMBED AND THE	177 E			Te l	repruary, 1995	362
5 - Engineering And Manufacturing Development	Jevelopm	ent	090	0604710A Night Vision Systems Engr Dev	lice light Visi	on Syste	ıms Engr	Dev	<b>Ξ</b> Ω	PROJECT DL 70
COST (In Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to	Total Cost
DL70 Night Vision Devices Engineering Development	27349	17879	10310	12904	11665	16844	18746	30364	Continuing	Continuing
C. Other Program Funding Summary										
Night Vision Devices KA3500 OPA2	FY 1994 87926	EY 1995 80034	EY 1996 77132	FY 1997 81750	FY 1998 52887	FY 1999 2799	FY 2000 96408	FY 2001 121303	To Compl	Total Cost
D. Schedule Profile										
-	FY 1994		<u>і</u> .	FY 1995	•	FY 1996			FY 1997	
Initiated TWS technical test	^ *	4	7 1	₩	4	7	۵ 4	_	2 3	4
Initiated TWS limited user test (LUT)	<	×								
TWS Low Rate Initial Production decision			×							
TWS Low Rate Initial Production award			×							
Initiate TWS user test (IOTE)							×			
TWS Milestone III Production decision								×		<del></del>
Initiated I CMC technical tech	;								×	
Initiated LCMS user test	, Y	**								
LCMS Milestone III Pdn decision		<b>;</b>		×						
LCMS Production Award				:×						•
Special IPR C/VAM for MELIOS	*			}						
Initiate DVE technical test			×							
Initiate DVE user test			×							
DVE Low Rate Initial Production decision					×					
for BFVS version										
DVE Low Rate Initial Production award					×					
(BFVS version)										
Objective LCMS Milestone II Decision					×					
Objective LCMS E&MD Award					ŧ		×			
			Page 8 of 13 Pages	Pages				Exhibit R-2	^	
			701							1100 82
			<b>8</b>							ilem 83

RDT	RDT&E PROGRAM ELEMENT	RAM ELE	MENT/PR	/PROJECT C	SOST BF	REAKDO	COST BREAKDOWN (R-3)		DATE Fe	February, 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	y And Manuf	acturing [	<b>Jevelopmen</b> (	•	PE NUMBER AND TITLE 0604710A Nigh	NAND TITLE	Vision Sy	DITLE Night Vision Systems Engr Dev		<u>-</u> 0	PROJECT DL 70
A. Project Cost Breakdown	eakdown										
Primary Hardware Development Contractor Engineering Support	evelopment ing Support			FY 1994 18350 1341		FY 1995 11803 1352	FY 1996 5129 1331	FY 1997 7748			
Government Engineering Support Project Management Support	ering Support			3726 1163		2223 1168	2218	2172			
Testing SBIR/STTR	:			2769		970 363	480	890			
Total				27349		17879	10310	12904			
B. Bucket Acquisition History and Planning Information	ion History and	Planning Inf	<u>ormation</u>								
Performing Organizations Contractor or	zations										
Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	nt Organizations			30767	907.00	7	9	ć	ć	ć	
Co., El Segundo,	120	383	06474	42490	3/498	3132	1840	•	>	Đ	42490
CA Lockheed-Sanders,	C/CPIF	Feb 92	18769	18769	12509	4558	1702	0	0	0	18769
Nashua, NH Magnavox,	C/CPIF	Aug 93	7571	7571	200	4071	3000	0	0	0	1571
Mahwah, NJ Texas Instruments,	C/CPIF	Aug 93	10774	10774	800	6969	3705	0	0	0	10774
McKinney, TX	TIO)/J	30%				c	C	\$130	9777	e initial	
TBS (LLDR)	MIPR	S S				0	1556	0	0		1556
				Page	Page 9 of 13 Pages	Sä			Exhibit R-3	<b>⊱</b> -3	
					707						Item 83

SUDGET ACTIVITY  5 - Froingeding And Manifesturing Desired
pment
Performing Project Activity Office EAC EAC
Delivery <u>Date</u>
Page 10 of 13 Pages 708

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATION	ON SHE	ET (R-2	Exhibit	(1)		DATE <b>Feb</b>	February, 1995	395
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develop	Developm	ment	PE NL 060	PE NUMBER AND TITLE 0604710A Nigh	TITLE Night Vision Systems Engr Dev	on Syste	ms Engr	Dev	ā □	PROJECT <b>DL74</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL74 Long Range Advanced Scout Surveillance System (LRAS3)	0	0	0	2985	7263	4643	0	0	0	14891
C. Other Program Funding Summary									Ę	Total
0603774A D131 Budget Activity 4 LRAS-3 K38300 OPA2	FY 1994 4694 0	FY 1995 2678 0	FY 1996 2960 0	FY 1997 2919 0	FY 1998 3247 0	FY 1999 3215 19312	FY 2000 3682 37761	FY 2001 3676 49450	Compl Continue 40791	Continue 147314
D. Schedule Profile	FY 1994		Ы., e	FY 1995	•	FY 1996		-	FY 1997	₹
Milestone I/II IPR E&MD Contract Award	~	•	7		<del>-</del>	7		-	• ×	•
•	:									
			Page 11 of 13 Pages	13 Pages				Exhibit R-2	-2	
										Item 83

RDT	&E PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OJECT C	SOST BE	REAKDO	WN (R-3		DATE	February, 1995	995
BUDGET ACTIVITY 5 - Engineering	3 And Manu	facturing	DGET ACTIVITY - Engineering And Manufacturing Development	ا ا	PE NUMBER AND TITLE 0604710A Nigh	AND TITLE	Vision Sy	PENUMBER AND TITLE OGO4710A Night Vision Systems Engr Dev			PROJECT DL74
A. Project Cost Breakdown	eakdown.		,								
Project Management Source Selection Hardware Development Total	ent			FY 1994		FY 1995	FY 1996	FY 1997 100 335 2550 2985	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
B. Budget Acquisition History and Planning Information	tion History and	d Planning In	formation								
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity Vehicl	izations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Product Development Organizations TBS C/CPIF	nt Organizations C/CPIF	3097				0	0	0	2550	9167	11717
Support and Management Organizations Project Mgmt CECOM NVESD MIPR	ement Organizat MIPR	tions				00	00	0 0	335 100	664	999
Test and Evaluation Organizations OPTEC MIPR	Organizations MIPR					0	0	0	0	650	959
				Page	Page 12 of 13 Pages	ه			л С	Ç.	
					710	3				2	ftem 83

Item 83

RDT&E PROGI	RAM ELEMEN	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OST BR	EAKDO	WN (R-3		DATE	Cobriga, 100K	900
BUDGET ACTIVITY  6 - Fnoineering And Manifacturing Development	facturing Develo	tuemon.	PE NUMBER AND TITLE	AND TITLE	PE NUMBER AND TITLE  OG04710A Night Vision Systems From Day	tome En	i		PROJECT PI 74
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle	Award or Obligation Delivery	<b>Y</b>	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property None Support and Management Property None Test and Evaluation Property None									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997 2550 435 2985	Budget to Complete 9167 2089 650 11906	Total Program 11717 2524 650
		•					i i i	:	
		rage	Page 13 01 13 Pages	Sa			EXPIDIT K-3	2	

	RDT&E BUDGET ITEM JU		TIFICAT	HS NOI	EET (R	STIFICATION SHEET (R-2 Exhibit)	it)		DATE Fet	February 1995	95
8ubGi 5 - E	вирсет астімту 5 - Engineering And Manufacturing Development	evelopm	ent	PE NL 060	PE NUMBER AND TITLE 0604713A Com Equipment	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment	eeding,C	lothing a	put		
	COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	27008	24719	17959	67971	52561	42743	39032	48670	Continuing	Continuing
DC40	DC40 Unit/Organizational Equipment	4085	1422	4220	848	1988	2022	1596	1469	Continuing	Continuing
DL40	DL40 Clothing and Equipment	5607	6050	2205	3728	4091	4860	4052	5071	Continuing	Continuing
D548	D548 Military Subsistence System	1268	198	844	637	696	1440	1848	1996	Continuing	Continuing
D887	D667 Enhanced Land Warrior	0	904	0	\$223	34761	23610	18123	25496	Continuing	Continuing
888C	D668 Soldier Enhance Program	16170	15887	10690	10321	10752	10811	13407	14638	Continuing	Continuing

A. Mission Description and Budget Item Justification: Supports Engineering and Manufacturing Development (EMD) and Non-Developmental Item (NDI) evaluation and collective protective shelters; decontamination items; and improved space heaters to shelter and sustain the soldiers in the field and improve quality of life. The Land logistics requirements for all four Services. The organizational equipment program supports development of a new generation of field device support items: small, large enhance soldier efficiency, effectiveness, lethality, sustainability and survivability. New food items and food service equipment will be developed to reduce food service of unit/organizational equipment, weapons/munitions, clothing and individual equipment, fabric shelters, field service equipment, food and food service equipment to Warrior program will produce the first fully integrated fighting system for combat soldiers. The projects in this Program Element support research efforts in the engineering manufacturing development and NDI phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

maintenance tents will ensure continuous operation and combat readiness of helicopters and vehicles. The Family of Space Heaters fuel efficiently replaces dangerous tent Project DC40 - Unit/Organizational Equipment: Develop and field soft shelters, showers, latrines and heaters to improve unit sustainability and combat effectiveness. The Force Provider package of tents, laundries, showers, and latrines support improved soldier quality of life as well as humanitarian aid and disaster relief. Improved

# FY 1994 Accomplishments:

- Initiated EMD of the 35k BTU Space Heater Convective (SHC). (370)
- Conducted Force Provider Operational Test (OT), refurbished test unit and fielded the first module (supports 550 soldiers). (1000)
- Type classified the Force Provider System. (500)
- Awarded Contracts for Force Provider pre-planned product improvements for latrine, laundry and winter operation. (1000)
- Fabricated and tested air beam concepts and down selected to best technology for the Transportable Helicopter Enclosure. (THE). (650)

Page 1 of 19 Pages

712

Exhibit R-2

UNCLASSIFIED

Itcm 84

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604713A Combat Feeding, Clothing and	pu
	Equipment	

Completed next generation design for the Modular General Purpose Tent System (MGPT3) and the Tactical Air Shelter (TAS). (545)

# FY 1995 Planned Program:

- Complete redesign of the MGPTS and conduct combined Preproduction Qualification Test/Operational Test (PPQT/OT). (602)
- Complete comparison testing of the Frame and Airbeam versions of the Transportable He. icopter Enclosure. (216)
- Complete Pre-Production Qualification Test (PPQT) of the Space Heater Convective (SHC) and initiate EMD of the Space Heater Small (SHS) and the Space Heater Arctic (SHA). (575)
- SBIR/STTR Adjustment (29)

# FY 1996 Planned Program:

- Complete testing and Type Classify Force Provider pre-planned product improvements (PUD). (2000)
- Complete PPQT of the SHS and SHA and Type Classify the SHC. (650)
- Complete Technical Test/Operational Test (TT/OT) and Type Classify the Containerized Self Service Laundry. (471)
  - Complete development and Type Classify the MGPTS. (200)
- Complete development and Type Classify the Transportable Helicopter Enclosure (THE). (379)
  - Complete development and Type Classify the Lightweight Maintenance Enclosure. (329)
- Initiate testing of the Ballistic Protective System. (191)

# FY 1997 Planned Program:

- Complete development and Type Classify the SHS and SHA. (288)
- Complete TT/OT of the Laundry and Dry Cleaning System. (560)

Project DL40 - Clothing and Equipment: Develop state-of-the-art individual clothing and equipment to improve the effectiveness, sustainability and quality of life of the individual soldier. Funding shown in FY 1996-FY 1998 reflects transfer of funds from DLA0 to OSD PE 0604384BP to support the Chemical/Biological Defense program in accordance with Public Law 103-60 Title XVII.

# FY 1994 Accomplishments:

- Defined specifics of requirements (based upon trade-off analyses of performance, producibility and costs) and developed Program Management Plans and Test Plans: Sun, Wind and Dust Goggle, Advanced Combat Vehicular Crewman Helmet, Body Armor Set Individual Countermine Preplanned Product Improvement (P3I), Modular Load Bearing Equipment, and Firefighters Suit - Combat. (593)
- review: Joint Service Lightweight Suit Technology (JSLIST) I Ensemble (chemical protective suits, boots and gloves), Improved Toxicological Agent Protective Suit, Conducted market survey, developed initial design concepts, conducted technical and early user evaluations and downselected designs/materials/equipment in design

Page 2 of 19 Pages

xhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604713A Combat Feeding, Clothing and	····
	Equipment	

Personal Ice Cooling System, and Desert Camouflage Fabric Improvement. In addition, conducted early prototype development, design review and evaluations of Women's dress uniform components (shirts, overblouse, slacks, skirts, necktab and belt) (4289)

- Completed Development Test/Operational Test (DT/OT), assessment reports and type classified: Intermediate Cold Wet Glove P31, Aircrew Clothing System Cold Weather, Body Armor Set, Individual Countermine (limited procurement, urgent), Women's Oxford Shoe. (525)
- Provided support for Somalia action. (100)

# FY 1995 Planned Program:

- Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Firefighters Suit - Combat, Improved Sun, Wind and Dust Goggles, Body Armor Set Individual Countermine (BASIC) P31, Modular Body Armor, Modular Load Joint Service Lightweight Integrated Suit (JSLIST) II Ensemble, Improved Toxicological Agent Protective (TAP) Suit, Personal Ice Cooling System, Interim Bearing Equipment, Auxiliary Aviation Lighting. (3839)
- Procure test items and initiate DT/OT: JSLIST I Ensemble (chemical protective suits, socks, boots and gloves), Women's Dress Skirt, Improved Fabric for Optional Green Uniform, Personnel Armor System for Ground Troops (PASGT), Small Arms Overvest (urgent Army requirement). (1970)
  - Complete DT/OT and assessment reports, type classify, and/or complete Technical Data Package and transition to production: Women's Dress Ensemble, Maternity Uniform, Ballistic/Laser Eye Protection Spectacle P31, and Special Protective Eyewear, Cylindrical System. (115)
    - Advanced CVC Helmet now reported in PE/Project 0603747A/D603.
- SBIR/STTR Adjustments (126)

# FY 1996 Planned Program:

- Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Modular Body Armor, Modular Load Bearing Equipment. (1000)
  - Procure test items and initiate DT/OT: Improved TAP Suit and Personal Ice Cooling System (Joint Service DT/OT), BASIC P31. (1105)
  - Complete DT/OT and assessment reports, type classify, and transition to urgent production of contingency supply: PASGT Small Arms Overvest. (100)
- Starting in FY 96, funds for chemical defense items such as the JSLIST I and II Ensembles will come from OSD to lead Services (JSLIST I = US Marine Corps, ISLIST II = US Army), per Public Law 103-60. DLA0 total reflects a \$2.3M transfer to OSD PE 060384BP Chem/Bio Defense.

# FY 1997 Planned Program:

- Conduct market survey, develop initial design concepts, conduct technical and early user evaluations and/or downselect designs/materials/equipment in design review: Lightweight Microclimate Cooling System. (793)
- Procure test items and initiate DT/OT: Modular Body Armor, Modular Load Bearing Equipment. (1883)
- Complete DT/OT and assessment reports, type classify, and/or complete Technical Data Package and transition to production: BASIC P31, Improved TAP Suit, Personal Ice Cooling System. (1050)

Page 3 of 19 Pages

Exhibit R-2

Item 84

	ISTIFICATION SHEET (R-2 Exhibit) February 1995	
BUDGET ACTIVITY PE NUMBER AND TITLE	ER AND TITLE	T
5 - Engineering And Manufacturing Development   06047134	0604713A Combat Feeding, Clothing and	
Equipment	ment	

DL40 reflects a \$1.0M transfer to OSD PE 0603884PB Chem/Bio Defense per Public Law 103-60.

requirements for all four services. Development of Joint Service Food/Food Service Equipment to improve individual combat effectiveness and reduce logistics burden and requirements. Program is reviewed and validated twice annually by the DoD Food and Nutrition Research and Engineering Board as part of the Joint Service DoD Food Project D\$48 - Military Subsistence System: Engineering and Manufacturing Development (EMD) and Non-Developmental Item (NDI) evaluation of food and food Operation and Support costs of subsistence support for service men & women. Develop multi-fuel, rapidly deployable field food service equipment to support combat, humanitarian missions and operations-other-than-war. Improve equipment to enhance safety in food service, utilize battlefield fuels and decrease fuel and water service equipment to enhance soldier efficiency and survivability. New food items and food service equipment will be developed to reduce food service logistics

# FY 1994 Accomplishments:

- Fabricated prototype Initial Deployment Kitchen for Air Force Bare Base as part of the DoD food program. (354)
  - Initiated an NDI integration effort to develop a prototype of a more efficient Containerized Kitchen. (798)
- Terminated development of a portable water heater and sanitation unit for Marine Corps field feeding system. (114)

# FY 1995 Planned Program:

- Conduct Technical/Operational Testing and type classify the safer, more efficient and supportable Powered Multifuel Burner to replace the gasoline burner. (240)
  - Complete Technical/Operational Testing of the Initial Deployment Kitchen for Air Force. (200)
- Conduct initial Technical/Operational Testing of the highly mobile Containerized Field Kitchen. (406)
  - SBIR/STTR Adjustments (18)

# FY 1996 Planned Program:

- Initiate pre-planned product improvement to replace the battery with a thermoelectric power supply on the Powered Multifuel Burner. (400)
  - Complete Technical Data Package (TDP) for Initial Deployment Kitchen and transition to Air Force for procurement. (50)
    - Complete development and operational testing of Containerized Field Kitchen. (394)

# FY 1997 Planned Program:

- Complete pre-planned product improvement program for the Powered Multifuel Burner. (390)
- Develop and conduct user test(s)/evaluation(s) of the planned improvements designed to increase safety, performance and readiness of the Army Field Feeding System-Future in cold and extreme cold environments. (175)
  - Type classify Containerized Field Kitchen and transition to procurement. (272)

Page 4 of 19 Pages

Exhibit R-2

#### February 1995 DATE 0604713A Combat Feeding, Clothing and RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE Equipment 5 - Engineering And Manufacturing Development **BUDGET ACTIVIT**

mature technologies demonstrated in the Soldier Integrated Protective Ensemble (SIPE) and other RDT&E capabilities by government and industry. LW will enhance the dismounted infantryman's lethality, command and control, mobility, sustainment and survivability. The program encompasses everything the soldier wears or carries for (TLD) and then transition to 21CLW development. MW program is planned to follow the LW program and will leverage on LW technology. MW system is needed to Project D667 - Enhanced Land Warrior: The Enhanced Land Warrior (ELW) program strategy is structured for the continuous modernization of all soldiers: Land integrated soldier system for dismounted combat soldiers. LW is focused to keep pace with the Army Digitization effort and is critical to the digitization of the soldier appropriate. Less mature technologies not available for acquisition in LW will be demonstrated in the 21st Century Land Warrior (21CLW) Top Level Demonstration Warrior (LW), Mounted Warrior (MW), and Air Warrior (AW). LW is the lead program and the technology carrier for the ELW program. LW is a first generation, components, whenever possible, to provide state-of-the-art digitized technology. LW will also incorporate/integrate equipment from ongoing RDA programs, where system to support the Force XXI Concept and the Chief of Staff of the Army's initiative to field an operational digitized force by the year 2000. LW will incorporate individual use. The backbone of LW will be the radio/computer/Global Positioning System (GPS) and head mounted display. The LW program will leverage NDI enhance combat effectiveness, reduce vulnerability and integrate combat vehicle crewman (CVC) into the digital battlefield.

# FY 1994 Accomplishments:

Project not established until FY 95.

# FY 1995 Planned Program:

- Continue development of an Advanced CVC helmet to support the MW program. (244)
- Conduct market surveys to evaluate state-of-the-art headsets to determine technical feasibility of doing cordless communications. (100)
  - In-House support to prepare documentation in preparation of Milestone I for Mounted/Air Warriors. (142)
    - SBIR/STTR Adjustments (10)

### FY 1996 Planned Program:

Program is not funded in FY 96.

# FY 1997 Planned Program:

- Conduct LW Development Test (DT) and Pre-production Qualification Test (PPQT) and prepare test support package. (16000)
  - Fix deficiencies and finalize LW hardware/software design/integration. (10500)
- Implement LW functional plans: Integrated Logistics Support (ILS), configuration management, etc. (14000)
  - Publish LW draft system manuals. (1500)
- Program Management and government oversight of contractor effort. (7739)
  - Procurement of LW long lead items for IOTE. (2000)
    - Conduct LW logistics demonstration. (500)

Page 5 of 19 Pages

Exhibit R-2

716

RDT&E BUDGET ITEM JUSTIFICATION	USTIFICATION SHEE" (R-2 Exhibit) PATE February 1995	95
BUDGET ACTIVITY	PE NUMB. R AND TITLE	
5 - Engineering And Manufacturing Development	0604713A Combat Feeding, Clothing and	
	Equipment	

improve soldier lethality, survivability, combat effectiveness, quality of life and sustainabilit . Programs focus on non-developmental items to expedite the research and Project D668 - Soldier Enhancement Program: This project consists of multiple program; to identify, test and evaluate individual soldier clothing and equipment to development process. Programs are categorized in four general areas: weapons and munitions, combat clothing, communications and navigation aids, and food/water/shelter. Programs generally take three years to complete.

### FY94 Accomplishments:

- Weapon Blank Firing Adapter, 5.56 NATO Armor Piercing Ammunition, 7.62mm Small Arms Light Armor Penetrator (SALAP), Small Unit Health Comfort Pack, Ghillie Suit Accessory Kit, Insulated Food Container, Mounted Water Ration Heater, Neckgaiter, Multi-Faith Individual Ration, Personal Body Armor, Modular Completed development/type classified the AT4 Night Sight Bracket, M249 Sniper Weapon Night Sight, Universal Boresight Device, M249 Squad Automatic Sleeping Bag System, and Personal Hygiene Body Wipe. (1137)
- Small Unit Shower, Improved Mechanics Coveralls, Improved Skis and Bindings, Lightweight Underwear, Enhanced Tactical Load Bearing Vest, Mounted Crewman Butt Pack, Improved Rain Suit, Sock System, Improved Shelter, Improved Hot Weather Boot, and Improved Personal Armor System Ground Troops (PASGT) Helmet Clothing System (2nd Gen ECWCS) (Parka/Trousers), Combat N'edic Vest, Individual Soldier Enhanced Ration, Inconspicuous Body Armor, Dual Mount, Improved Surveillance Battle Damage Assessment (BDA) Device, 5.56 Dim Tracer, Lightweight Video Reconnaissance System, Lightweight Leader Computer, 40mm Smoke Projectile, Fighting Position Excavator, Soldier Fighting Cover, Electronic Tool Supply Catalog, Fighting Position Revetment Kit, Monocular Night Vision Device, Cold/Wet Glove, Improved Chemical Biological Glove, Lightweight Chemical Overgarment, Trigger Finger Mitten, Second Generation Extended Cold Weather Developed/procured prototypes and/or tested the Modular Weapon System, Multiple Magazine Holder, M203 for M4 Carbine, M249 Collapsible Buttstock, Dual Mount, XM144 Spotting Scope, Miniature Binoculars, 40mm Infra-Red (IR) Illumination Round, Portable Periscope, Close Combat Optics, HMMWV Mount, Suspension. (14202)
  - Began development on the M249 Flash Suppressor/Blast Attenuator, Stun Grenade, .50 caliber Multiple Purpose Round, PASGT Liner (Parachutist), and the Mounted Crewman Boot. (709)
    - Terminated and/or redirected efforts on the XM 192 Lightweight Tripod, 40mm High Velocity Tracer, and 40mm Canister Round for the M19. (122)

# FY 1995 Planned Program:

Complete development/type classify the XM144 Spotting Scope, Medium Machine Gun, M24 Flash Suppressor/Blast Attenuator, 5.56 Dim Tracer, Dual Mount, M203 for M4 Carbine. Multiple Magazine Holder, Miniature Binoculars, M249 Collapsible Buttstock, Portable Periscope, Close Combat Optics, .50 caliber Multiple Purpose Round, Stun Grenade, Launched Grapnel Hook, Mounted Crewman Cold/Wet Glove, Enhanced Tactical Load Bearing Vest, Lightweight Underwear, 2nd Gen ECWCS, Improved Butt Pack, Small Unit Shower, Electric Tool Supply Catalog, Dual Mount, Lightweight Video Reconnaissance System, Individual Soldier Enhanced Ration, Interim Water Individual Purification System, and Inconspicuous Body Armor. (6159)

Page 6 of 19 Pages

Exhibit R-2

DATE

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 1995
8	BUDGET ACTIVITY PE NUMBER AND TITLE		
rO.	5 - Engineering And Mancfacturing Development   0604713A Co	0604713A Combat Feeding, Clothing and	
	Equipment		
Ŀ	Develop procure prototypes and/or test the Modular Weapon System, 40mm IR Illumination Round, HMMWV Mount, Surveillance BDA Device, Improved	HMMWV Mount, Surveillance BDA Device, Im	mproved
	Chemical Biological Glove, Mounted Crewman Boot, Lightweight Chemical Overgarment, Fighting Position Excavator, Soldier Fighting Cover, Fighting Position	g Position Excavator, Soldier Fighting Cover, Fig	ighting Position
	Revetment Kit, Monocular Night Vision Device, Lightweight Leader Computer, and 40mm Smoke Grenade. (6308)	Grenade. (6308)	•
•	Begin market surveys and/or development of the following FY 1995 new starts: Armor Crew Infantry Protective Mask, Soldier Radio, Medium Machine Gun,	ry Protective Mask, Soldier Radio, Medium Mach	chine Gun,
	Machine Gun Optics, Improved Floatation Device, Face Paint, and Individual Sandbagging Accessory. (2866)	ry. (2866)	
•	Terminate/suspend the Trigger Finger Mitten, Individual Air Activated Catalytic Heater, and Enhanced Incendiary Grenade programs. (0)	ced Incendiary Grenade programs. (0)	
•	Reprogramming. (220)		
•	SBIR/STTR Adjustments (334)		

# FY 1996 Planned Program

- Complete development/type classify the Modular Weapon System, 40mm IR Illumination Round, Surveillance BDA Device, HMMWV Mount, Mounted Crewman Boot, Combat Medic Vest, Improved Floatation Device, Soldier Radio, Lightweight Leader Computer, Soldier Fighting Cover, Fighting Position Revetment Kit, 40mm Smoke Grenade, Armor Crew/Infantry Mask, and Individual Sand Bagging Accessory. (32%)
  - Development/procure prototypes/test Machine Gun Optics, and Face Paint. (1852)
- Complete DT/OT on the Lightweight Chemical Overgarment and Improved Chemical/Biological Glove. (400)
- Initiate market carrens/development on items identified for development in FY 1996 (since these are three year Non Developmental Items programs, requirement documentation will not be developed until FY 1995 for FY 1996 programs). (5142)

# FY 1997 Planned Program:

Complete descriptions of the change the Lightweight Chemical Overgarment, Improved Chemical/Biological Glove, Soldier Radio, Machine Gun Optics, and Face Paint. (1176)

Initiate market surveyed/evelopment on items identified for development in FY 1997 (since these are three year Non Developmental Items programs, requirement Continue work/testing on FY 1996 projects (based on March 1995 Soldier Enhancement Program Review). (5370) documentation will not be developed until FY 1996 for FY 1997 programs). (3775)

Page 7 of 19 Pages

**Exhibit R-2** 

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION	SHEET (R	-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Developme	pment	PE NUMBER AND TITLE 0604713A Com Equipment	D ΤΙΤLE Combat Fe	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment	
B. Program Change Summary: Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SBIR/STTR (-441)	EY 1994 28389 28389 -1381	EY 1995 25058 24719	<u>FY 1996</u> 27466	<u>FY 1997</u> 25950	
b. Reprogramming total (-940) Current Budget Submission/President's Budget	27008	24719	17959	67971	

Exhibit R-2

RDT&E BUDGET ITEM J		FICATION	HS NC	ET (R-2	JSTIFICATION SHEET (R-2 Exhibit)	<b>3</b>		DATE Fe	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060 Equ	PE NUMBER AND TITLE 0604713A Com Equipment	D TITLE Combat Feeding,Clothing and t	eeding,C	lothing a		ā 0	PROJECT DC40
COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1996 Estimate	F ' 1997 Estimate	FY 1998 Estimate	FY 1990 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC-40 Unit/Organizational Equipment	4065	1422	4220	848	1986	202	1598		Continuing	Continuing
C. Other Program Funding Summary.			į						ĺ	
Other Procurement Army Activity 3: Force Provider (M80200)	FY 1994	FY 1995 10664	FY 1996 12275	FY 1997 12127	FY 1998 12327	FY 1999 6880	FY 2000 6910	FY 2001 13329	Compl	Total Cost 74512
D. Scheduk Profile	FY 1994	•	E.,	FY 1995	•	FY 1996	92 °		FY 1997	
Conducted Force Provider OT  Type classified Force Provider  Complete PPQT of Space Heater  Convective  Conduct TT for Force Provider P31  Complete TT/OT of LADS  TC Modular General Purpose Tent  System		•	•	n	- • ×	4	• × ×	-	n N	* ×
		,	Page 9 of 19 Pages	Pages				Exhibit R-2	~	
										100

720

Item 84

RDT8	RDT&E PROGRAM ELEMENT	AM ELE	MENT/PRC	SJECT C	OST BR	EAKDO	I/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	And Manufa	acturing De	svelopment		PE NUMBER AND TITLE 0604713A Com Equipment	AND TITLE A COMB	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment	,Clothing	l		PROJECT DC40
A. Project Cost Breakdown	ikdown										
Primary Hardware Development S.BIR/STTR Adjustment Total	velopment int			FY 1994 4065 4065	EY 1995 1393 29 1422	1995 1393 29 1422	FY 1996 4220 4220	EY 1997 848 848			
B. Budget Acquisition History and Planning Information	n History and I	Planning Info	rnation								
Performing Organizations	ıtions										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations Hunter Mfg, Army Research Lab, Acurren, White Sands	Organizations Research Sands		N/A*	N/A*	2754	1650	576	1695	341	Cont	Cont
Range, General Missile Services Technical, Support and Management Organizations Soldier Systems Command	Missile Technical, tent Organizatio Command	SI			350	420	145	425	85	Cont	Cont
	rganizations				400	1995	701	2100	422	Cont	Cont
* DC40 Program line is ongoing in nature, and is and Total Program Categories are not applicable to DC40.	ram line is ongo tegories are not a	ing in nature, applicable to L	<ul> <li>DC40 Program line is ongoing in nature, and is made up of multiple projects which are on separate project schedules, as a result, the EAC, Budget to Complete in Program Categories are not applicable to DC40.</li> </ul>	of multiple pr	ojects which	are on separa	ate projaut sch	edules, as a r	esult, the E/	AC, Budget to	Complete

Government Furnished Property: N/A

Page 10 of 19 Pages 721

Exhibit R-3

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BE	EAKDO	WN (R-3		DATE F.	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604713A Com	AND TITLE	PENUMBER AND TITLE 0604713A Combat Feeding, Clothing and	3,Clothing	and	20	PROJECT DC40
	Equipment	ent					
	Total Prior to					Budget to	Total
	EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Subtotal Product Development	2754	1650	576	1695	341	Cont	Cont
Subtotal Support and Management	350	420	145	425	<b>\$</b>	Con	S (
Subtotal Test and Evaluation   Total Project	3.5 2.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3	1995 4065	701 1422	2100 <b>4</b> 220	422 848	<b>5</b> 5	i i
						۳. ۵	
	We 11 0/17 1 W	3					
							15 m

Item 84

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TSUL M	FICATION	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060 Eq.	PE NUMBER AND TITLE 0604713A Com Equipment	D TITLE Combat Feeding,Clothing and t	eeding,C	lothing a		14	PROJECT DL40
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL40 Clothing and Equipment	2507	9909	2205	3726	4091	4860	4052	5071	Continuing	Continuing
C. Other Program Funding Summary										
OMA	FY 1994 2890	FY 1995 7050	FY 1996 5960	FY 1997 6130	FY 1998 6130	FY 1999 6020	FY 2000 6020	FY 2001 6020	To Comple cont	Total Cost
D. Schedule Profile										
•	( 19	,	<b>E.</b> ,	r 199	,	FY 1996	8		Y 199	-
Type Classify (TC) Aircrew Cold Weather	າ <b>*</b> 7	4	1 2	የጎ	4	7	4	~	2 3	₩
Clothing & Women's Oxford Slace	•									
Eye Protection (BLPS P3I/SPEC) Complete DT/OT & Reports/TC		*	×							
PASGT Small Arms Overvest Complete					×					
Improved TAP Suit/PICS Conduct Market		*					;			
DT/OT							×			_
Improved TAP Suit/PICS Complete Testing Reports/TC									×	
Modular Body Armor & LBE Complete										×
Modular Body Armor & LBE Complete					×					
Designs and Early Evaluation/Complete DT/OT and Reports										. <u></u>
			Page 12 of 19 Pages	9 Pages				Exhibit R-2	2	
		!	; ;							,

723

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT CC	ST BREAKE	OWN (R-3)	DATE	E February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development		PENUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment	E nbat Feeding	, Clothing and		PROJECT DL40
A. Project Cost Breakdown	-					
Primary Hardware Development SBIR/STTR Adjustment Total	5507 5507 5507	EY 1995 8824 126 6050	EY 1996 2205 2205	F <u>Y 1997</u> 3726 3726		
B. Budget Acquisition History and Planning Information: N/A						<u> </u>
	Page 13	Page 13 of 19 Pages		Ext	Exhibit R-3	
		724				Item 84
	UNCL	UNCLASSIFIED				

RDT&E BUDGET ITEM JUS		FICATION	ON SHE	ET (R-2	TIFICATION SHEET (R-2 Exhibit)	()		DATE Fel	February 1995	195
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develop	Developm	ment	PE NU 060 Equ	PENUMBER AND TITLE 0604713A COM Equipment	ре NUMBER AND TITLE 0604713A Combat Feeding,Clothing and Equipment	eeding,C	lothing a	pul	<u>a</u>	РРОЈЕСТ <b>D548</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1987 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D548 Military Subsistence System	1288	288	3	837	868	1440	1848	1996	Continuing	Continuing
C. Other Program Funding Summary.									Ę	F F
Other Procurement Army Activity 3 M86400 Kitchen, Containerized, Field	EY 1994	EY 1995	FY 1996	FY 1997	EY 1998	FY 1999	FY 2000 4673	FY 2001 8099	Compl cont	Cost
D. Schedule Profile										
-	FY 1994		- -	FY 1995	-	FY 1996	% °°	-	FY 1997	4
Fabricated prototype Initial Deployment Kitchen (IDK)	i	*	•	•	•	1			ı	
Burner Conduct DT/OT of IDK					××					
Complete TDP of IDK Conduct DT/OT Containerized Field							××			
Kitchen Complete P31 for Powered Multifuel Burner										×
			Page 14 of 19 Pages	9 Pages				Exhibit R-2	5	
			i							Item 84

RDT&E PROGRAM ELEMENT/PRO	PROJECT COST BREAKDOWN (R-3)	OST BR	EAKDO	WN (R-3		DATE	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604713A Com Equipment	AND TITLE  M. Comb  ent	PENUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment	g,Clothing		a ()	PROJECT <b>D548</b>
A. Project Cost Breakdown Primary Hardware Development SBIR/STTR Adjustment	FY 1994 1266	扫	EY 1995 846 18	FY 996 844	FY 1997 837	7.6		
Total  B. Budget Acquisition History and Planning Information	1266		864	844	837			<del></del>
ži ži	Project Office EAC	Total Prior to EY 1994	EY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Natick, CECOM, General Technical Services		3729	1104	570	548	543		
Soldier Systems Command		249	72	4	42	42		
TECOM, OPTEC		994	8	250	254	252		
Government Furnished Property: N/A								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		Total Prior to FY 1994 3729 249 994	FY 1994 1104 72 90 1266	FY 1995 570 44 250 864	FY 1996 548 42 254 844	FY 1997 543 42 252 837	Budget to Complete Cont	Total Program
	Page I	Page 15 of 19 Pages	es			Exhibit R-3	<b>7-</b> 3	
		717						Item 84

Item 84

							ż			
RDT&E BUDGET ITEM JUS	M JUSTI	FICATI	ON SHE	ET (R-2	TIFICATION SHEET (R-2 Exhibit)	(		DATE <b>Fel</b>	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	)evelopm	ent	PE NU 060 Eq.	PENUMBER AND TITLE 0604713A COM Equipment	ס זודוב Combat Feeding,Clothing and t	eeding,C	lothing a	pui	id ()	Р <b>R</b> ОЈЕСТ <b>D667</b>
COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to	Total Cost
D867 Enhanced Land Warrior	0	907	0	5223	34761	23610	18129	25498	Continuing	Continuing
C. Other Program Funding Summary									To	Total
RDTE, Budget Activity 4 PE 0603747A	FY 1994 3768*	FY 1995 5458	FY 1996 25935	FY 1997 9453	FY 1998	FY 1999	FY 2000	FY 2001	Compl 154731	Cost 195507
OPA3, M80500 Enhanced Land Warrior WTCV, GB3007 Mod Wpn Sys - M4 Carbine Mod WTCV, GZ2800 Mod Wpn Sys (M16/M203)	2024	639	930 2842	2206 5767	2287 8081	2524 2524 7559	6/4/6	63304	770151	7947 7947 26912
*Note: Land Warrior was a portion of Project D669 within PE 0603747A.	) within PE 0	603747A.								
D. Schedule Profile	FY 1994 2 3	4	1 2	FY 1995 2 3	4	FY 1996 2 3	δ ω 4	-	FY 1997 2 3	4
ORD Approved	×									
Milestone I/II Decision Contract Award Fabricate OT Prototypes		K		×						×
			Page 16 of 19 Pages	19 Pages				Exhibit R-2	-2	
										Item 84

TRE PROGRAM ELEMENT	PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	95
Β∪DGET ACTIVITY 5 - Engineerinç⊦ And Manufacturing Development	D604713A Equipment	PE NUMBER AND TITLE 0604713A Comb Equipment	at Feedin	PENUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment		20	PROJECT D667
A. Project Cost Bri:akdown							
System Engineering and Program Management System Test and Evaluation Prototype Development and Manufacturing Other RDTE Costs Total	FY 1994 FX	EY 1995 4% 4%	FY 1996	EY 1997 33739 16500 2000 52239			
B. Budget Acquisition History and Planning Information:							
uing Organizations tor or Contract nent Method/Type Award or Performing P ing or Funding Obligation Activity (						Budget to	Total
Activity Vehicle Date EAC EAC   Product Development Organizations	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
To be determined Support and Management Organizations			244		12500		
Soldier Systems Command Test and Evaluation Organizations					23239		
To be determined			252		16500		<del> </del>
Government Furnished Property: None							
d	Page 17 of 19 Pages	ន	;		Exhibit R-3	63	
	728						Item 84

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI(	HS NC	ET (R-2	Exhibit	3		DATE Fet	February 1995	8
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ent	PENL 060 Equ	PE NUMBER AND TITLE 0604713A Com Equipment	PE NUMBER AND TITLE 0604713A Combat Feeding,Clothing and Equipment	eeding,C	lothing a		ă O	PROJECT D668
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
D668 Soldler Enhance Program	16170	15867	0690	10321	10752	10611	13407	14638	Continuing	Continuing
C. Other Program Funding Summary										
Operations & Maintenance, Army (OMA)	FY 1994 28971	FY 1995 1 70496	FY 1996 59566	FY 1997 61283	FY 1998 61283	FY 1999 60154	FY 2000 60154	FY 2001 60154	Compl Cont	Total Cost
K30800 Lightweight Video Reconnaissance Sys MA6800 Soldier Enhancement Program	9200	2210	2354	2696	3412	4221				14893
W63800 Lightweight Leader Computer Weanons & Tracked Combat Vehicles (WTCV)				6840	8814					15654
GC0076 Small Arms (SEP)			2428	2525	1294	1294				7541
GZ2800 Modified Weapons Systems (M16/M203) F88000 CTG Cal .50 (M904)/SLAPT GB3007 Modified Weapons Systems (M4 Carbine)	2024		2842 1041 930	5767	8081 351 2287	7559 868 2524	787	943		1943 26912 3990 7947
D. Schedule Profile: Approximately 50 individual projects are ongoing under the Soldier Enhancement Program (SEP) and each project has its own milestone schedule.	projects are	ongoing und	der the Soldi	ier Enhance	ment Prograu	m (SEP) and	l each projec	t has its own	n milestone s	chedule.
	FY 1994 2 3	4	- E - C	FY 1995 2 3	4	FY 1996	δ ε 4	-	FY 1997 2 3	4
SEP Requirements Review SEP Programs Review	* *	*	×		×	×	×	. •	×	×
		F	Page 18 of 19 Pages	9 Pages				Exhibit R-2	~	

729

RDT&	RDT&E PROGRAM ELEMENT	AM ELEN	MENT/PRO.	JECT C(	/PROJECT COST BREAKDOWN (R-3)	AKDOV	VN (R-3)		DATE F	February 1995	98
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	And Manufa	acturing De	velopment		PE NUMBER AND TITLE 0604713A Com	NO TITLE  Comba	t Feeding	PE NUMBER AND TITLE 0604713A Combat Feeding, Clothing and Equipment		20	PROJECT D668
A. Project Cost Breakdown	кфотв										
D668 - Soldier Enhancement Program Total	æment Program	_		EY 1994 16170 16170	EY 1995 15887 15887		EY 1996 10690 10690	EY 1997 10321 10321			
B. Budget Acquisition History and Planning Information	n History and l	Manning Infor	mation								
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	ations Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
PM Small Arms, PM Mines, C	it Organizations Natick, Countermines	_				16170	15887	10690	10321	Cont	Cont
anag IS tion (	ement Organiza Command Organizations	itions									
Government Furnished Property: N/A	ed Property: N	I/A									
											***

Page 19 of 19 Pages

730

Item 84

Exhibit R-3

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SUL ME	TIFICAT	ION SH	EET (R	-2 Exhib	it)		DATE <b>Fet</b>	February 1995	96
8008 <b>5 - 1</b>	BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	evelopm	ent	PE NL 060	PE NUMBER AND TITLE 0604715A Non-	ritle Ion-Syste	em Traini	ng Devic	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engr Dev	Dev	
	COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
	Total Program Element (PE) Cost	57004	47029	56303	53343	66081	54031	82160	64636	Continuing	Continuing
DC82	DC82 Louisiana Maneuvers	0	5848	5973	4987	4005	4021	3997	3990	Continuing	Continuing
DC91	DC91 Distributive Interactive Simulation	0	3445	6138	3745	11328	6992	17063	14053	Continuing	Continuing
D241	D241 Non-System Training Devices Combined Arms	42790	24680	31121	31314	36732	29923	46611	31928	Continuing	Continuing
D398	D398 Tactical Simulation (TIARA)	5173	3448	2083	2879	3205	2382	3997	3990	Continuing	Continuing
0573	D573 STRICOM and Naval Air Warfare Center Training Systems Division	9041	8086	9867	10418	10811	10713	10482	10675	Continuing	Continuing

providing realistic training while helping to control rapidly escalating costs. Training devices maximize the transfer of knowledge, skills and experience from the training combat readiness through realistic collective training in low, mid, and high intensity scenarios. Project DC82, Louisiana Maneuvers, is intended to energize and guide the (NAWCTSD) Support, funds in-house costs of project support by US Army Simulation, Training and Instrumentation Command (STRICOM) and NAWCTSD. Projects situation to a combat situation. Force-on-force training at the National Training Cc. ter (NTC), Ft. Irwin, CA; Joint Readiness Training Center (JRTC), Ft. Chaffee, AR, A. Mission Description and Budget Item Justification. Program Element funds engineering development of Non-System Training Devices to support force-on-force engineering development of techniques and technology for DIS and related simulations and simulator efforts. Project D241, Non-System Training Devices-Combined D241, D396 and D573 in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are and Combat Maneuver Training Center (CMTC), Hohenfels, Germany, and battlestaff training in Battle Command Training Program (BCTP) will provide increased Arms, develops simulation training devices for Army-wide use, including the CTCs. Project D396 Tactical Simulation, is an intelligence simulation/driver for both training at the Combat Training Centers (CTC), general military training and training on more than one item/system, as compared with system devices which are developed in support of a specific item/weapon system. Training devices and training simulations provide force multipliers that improve combat effectiveness by restructuring of the Army while simultaneously keeping it combat-ready for any contingency. Project DC91, Distributive Interactive Simulation (DIS), includes training (intelligence driver for Corps Battle Simulation (CBS)) and testing. Project D573, STRICOM/Naval Air Warfare Center Training Systems Division therefore correctly placed in Budget Activity 5.

forming a campaign to assess the Army of the 21st century in areas of policy, doctrine, organization, training, materiel, leader development, and soldier issues shaping the force. As an evolving process, LAM will exploit the results and outcomes of each exercise by incorporating lessons learned in order to enhance the value of follow-on DC82 - Louisiana Maneuvers (LAM): LAM will serve as a laboratory for the Army to practice its roles and missions, to develop and explore options, to assess and direct progress, to provide a framework for decisions by senior leaders, and to facilitate the Army's transformation. LAM will consist of a series of related exercises

Page I of 16 Pages

Exhibit R-2

# February 1995 0604715A Non-System Training Devices Engr Dev RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 5 - Engineering And Manufacturing Development

exercises. Overall, LAM will focus the Army's self-assessment of institutional effectiveness, provide direction for change, and orient the Army's leadership to accomplish

the national military strategy with available resources.

FY94 Accomplishments: Funded under project D241. Restructured to DC82 in FY 95

# FY 95 Planned Program:

- Continue development of database tools for theater-level exercises (2448)
  - Initiate development of simulation linkages (1468)
- Conduct issue investigation by AMC, TRADOC, FORSCOM & Strategic Space Defense Cmd (1809)
  - SBIR/STTR (123)

#### 96 Planned Program: F

- Continue development of database tools for theater-level exercises (2500)
  - Continue development of simulation linkages (1500)
- Continue issue investigation by AMC, TRADOC, FORSCOM & Strategic Space Defense Cmd (1973)

#### 97 Planned Program:

7

- Continue development of database tools for theater-level exercises (2500)
- Continue development of simulation linkages (1500)
- Continue issue investigation by AMC, TRADOC, FORSCOM & Strategic Space Defense Cmd (987)

development, training, and operations, utilizing live, virtual and constructive simulations. This project was established in FY 95 and funding restructured from Project DC91 - Distributive Interactive Simulation (DIS) - DIS technology provides wide area simulation networking in support of modeling and simulation, doctrinal D241 to allow better tracking of DIS efforts.

FY94 Accomplishments: Funded under project D241. Restructured to Project DC91 in FY 95.

# FY 95 Planned Program:

- Continue DIS site operations (1415)
- Initiate systems engineering and integration contract (1958)
  - SBIR/STTR (72)

Page 2 of 16 Pages

Exhibit R-2

Item 85

**UNCLASSIFIED** 

732

5 - Engineering And Manufacturing Development

0604715A Non-System Training Devices Engr Dev

# FY 96 Planned Program:

- Provide system engineering, configuration management, and standard development for core DIS facilities (2434)
- DIS verification, validation and accreditation (2450)
- Provides enhancements to and integration of simulation software upgrades to support Advance Warfighting experiments (1255)

# FY 97 Planned Program:

- Provides system engineering, configuration management, and standard development for core DIS facilities (1395)
  - DIS Verification, validation and accreditation (2350)

D241 - NSTD Combined Arms: This project is used to develop prototype training devices to support Combined Arms (Infantry, Armor, Aviation, Air Defense, Artillery, simulations and instrumentation for the Combat Training Centers (CTC's) to include Opposing Forces Surrogate Vehicles (OSV's) for display of doctrinally correct thread Commanders and Battle Staff in the execution of close battle operations. Corps Battle Simulation (CBS) is the Army's standard command and staff training simulation at at the CTC's. The Air Ground Engagement System II (AGES II) will permit the inclusion of aviation assets in MILES tactical engagement exercises. Devices developed logistics training. Distributed Interactive Simulation (DIS) will allow training simulations representing different weapons systems and command levels at geographically support and linkage to other sinulations and simulators. WARSIM will comply with DIS standards and open architecture to meet the Army's training requirements into communications system. The Area Weapons Scoring System (AWSS) is the standard objective scoring system for aviation crew gunnery qualifications. The Intelligence the corps/division level. Combat Service Support Training Simulation System (CSSTSS) is a training sinulation which supports training at battalions through echelonsthe next century. Multiple Integrated Laser Engagement Simulation 2000 (MILES 2000) will provide additional weapon system capabilities during tactical engagement exercises. Simulated Area Weapons Effects-Radio Frequency (SAWE-RF) simulates area weapons effects using distributed processing techniques and a radio frequency Electronic Warfare Tactical Proficiency Trainer (IEWTPT) will provide the initial capability for sustainment training for military intelligence units. Additionally, this will enable the Army to train units collectively to obtain synergistic results through the employment of weapons and support systems in their respective battlefield roles above-corps levels to provide the level of detail required to train logistics commanders and staffs. CSSTS: will be linked to CBS to provide integrated maneuver and project provides for the development of maintenance simulators for many Army weapon systems. This project funds the development of training devices, simulators, generation battle simulation to replace CBS and Brigade/Battalion Battle Simulation (BBS). WARSIM will utilize current technology to efficiently provide training The Fire Support Combined Arms Tactical Trainer (FSCATT), provides for initial and sustainment gunnery training, and can be linked as part of the CATT family Engineer, Chemical, and Support troops) training and multi-system training within the Army, to include the Reserve Components. JANUS is a simulation to train dispersed locations to interact with one another in real time to provide more realistic combined arms training. Warfighter Simulation (WARSIM) will be the next FSCATT is designated as the Army's only defense acquisition pilot program IAW the Federal Acquisition Streamlining Act (FASTA)

## FY94 Accomplishments:

- Initiated development of MILES II for crew served and individual weapons (1034); FSCATT Phase I (385); CBS 1.5.2 (3194); STOW-E (250); architecture and test bed for WARSIM 2000 (2796); After Action Review system for BCTP (536)
- Initiated enhancement of After Action Report (AAR) for Armywide CBS use (164)
- Continued limited BBS enhancement (737)

Exhibit R-2

Item 85

Page 3 of 16 Pages

# February 1995 DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE

BUDGET ACTIVIT

5 - Engineering And Manufacturing Development

0604715A Non-System Training Devices Engr Dev

- Continued development of AGES II upgrades (4517), M113/BMP-2 Opposing Force Surrogate Vehicle (1383), CSSTSS (7878), devices, simulators and simulations to support training at the National Training Center (NTC), Joint Readiness Training Center (JRTC), and BCTP (5442), and CBS 1.5 (1448)
  - Initiated development of AGES II (AH-64) interface with CTC instrumentation (1422)
- Completed testing of Precision Gunnery Training System (1895), and GUARDFIST I (164)
- Completed Initial Operational Test & Evaluation of SAWE-RF (3091)
- Provided support of Louisiana Maneuvers exercises and CINC training initiatives (3092)
- Provided system engineering, configuration management, hardware maintenance and daily operation (f the core DIS facilities (3362)

# FY 95 Planned Program:

- Initiate development of CBS 1.5.3 (1488)
- Complete development of AGES II upgrades (1445), CSSTSS (5693); FSCATT Phase I (5755); and devices, simulators and simulations to support training at the CTC's (i.e., NTC, IRTC, CMTC and BCTP) to include completing development of CTC-1S interface Ages II) (1572)
- Continue architecture development and initiate Engineering Manufacturing Development for WARSIM 2000 (4735)
  - Continue limited BBS enhancements (580)
- Continue enhancements of BCTP AAR for Armywide CBS (731)
- Complete development of M113 OSV (500); and CBS 1.5.2 (1487); and GUARDFIST I (175)

## FY 96 Planned Program

- JANUS development of battle focus trainer enhancements to existing software baseline (429)
- Continue limited BBS enhancements (515); development of the CSSTSS (3362); and development of devices, simulators and simulations to support training at the NTC, JRTC, CMTC & BCTP (1889)
- Complete CBS 1.5.3 and continue limited enhancements to CBS (3003)
- Exercise contract option for Prime WARSIM EMD (10295)
  - Complete development of FSCATT Phase I (6006)
- Initiate SAWE-RF downsized man worn system (2188), and development of IEWTPT (3434)

#### 97 Planned Program F

- JANUS development of battle focus trainer enhancements to existing software baseline (498)
- Continue limited BBS and CBS enhancements (4080); development of the CSSTSS (2988); WARSIM 2000 EMD (18304); and IEWTPT (4558) and development of devices, simulators and simulations to support training at the NTC JRTC, CMTC & BCTP (87)
  - Initiate development of MILES 2000 for new weapon systems (i.e., armored gun system and Bradley A3 (799)

Page 4 of 16 Pages

Exhibit R-2

Item 85

# February 1995 RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

0604715A Non-System Training Devices Engr Dev

D396 - Tacical Simulation (TACSIM): TACSIM is a TIARA program. Funds development and testing support of TACSIM

## FY 94 Accomplishments:

- Completed TACSIM version 2.1.5 development (1731)
- Initiated TACSIM 2.1.6 development (800)
- Continued TACSIM/CBS development for CBS (2422)
- Initiated TACSIM/Aggregate Level Simulation Protocol (ALSP) urterface development (220)

# FY 95 Planned Program:

- Complete TACSIM 2.1.6 development (1050)
- Complete TACSIM/CBS development for CBS (590)
- Initiate TACSIM 2.1.7 development (1028)
- Continue TACSIM/ALSP interface development (218)
- Initiate development of Warfighters' Simulation (WARSIM) intelligence capability (490)
- SBIR/STTR (72)

## FY 96 Planned Program:

- Complete TACSIM 2.1.7 development (868)
- Complete TACSIM/ALSP interface development (175)
- Initiate TACSIM 2.1.8 der lopment/compatibility with CBS (565)
- Continue development of Warfighters' Simulation (WARSIM) intelligence capability (475)

# FY 97 Planned Program:

- Complete TACSIM 2.1.8 (800)
- Initiate minor TACSIM enhancements (186)
- Continue development of Warfighters' Simulation (WARSIM) intelligence capability(1893)

Page 5 of 16 rages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TION SHEET	(R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND 0604715A	PE NUMBER AND TITLE O604715A Non-Systen	Non-System Training Devices Engr Dev
B. Program Change Summary  Previous President's Budget  Appropriated Value  Adjustments to Appropriated Value	FY 1994 FY 1995 57188 48329 57188 47029 -804	FY 1996 55060	FY 1997 46191
æ	620 <b>57004</b> 47029	55303	53343
	Page 6 of 16 Pages	5.2	Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TSUC M	IFICA71	ON SHE	ET (R-2	Exhibit	t		DATE <b>Fel</b>	February 1995	195
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ent	PE NL 060	PE NUMBER AND TITLE 0604715A Non-	PENUMBER AND TITLE 0604715A Non-System Training Devices Engr Dev	em Traini	ing Devic	es Engr	1	PROJECT DC82
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
DC82 Louisiana Maneuvers	0	2848	5.073	4987	4005	4021	3997	3990	Continuing	Continuing
C. Other Program Funding Summary OPA2, Appropriation BE4162 MACOM Automation Systems	FY 1994 433	EY 1995 846	EY 1996 941	LY 1997 774	FY 1998 171	FY 1999 147	FY 2000 149	FY 2001	To Compl Cont'd	Total Cost Cont'd
D. Schedule Profile	FY 1994	<b>-</b>	- -	7 199	•	FY 1996		-	7 199	
Development of database tools for theater-level exercises	* <b>*</b>	+	7 ×	<b>n</b>	<b>-</b>	<b>×</b> ×	J.	-	۰ ۲ ×	4
Simulator Linkages	*×		×			×			×	
		:	Page 7 of 16 Pages	6 Pages		٤		Exhibit R-2		

737 \*

TAE PROGRAM ELEMENT	//PROJECT COST BREAKDOWN (R-3)	OWN (R-3)	DATE Febru	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604715A Non-	-System Train	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engr Dev	PROJECT BV DC82
FY 199 cater-level exercises	FY 1995 2448	<u>FY 1996</u> 2500	FY 1997 2500	
Development of simulation linkages  Issue investigation by AMC, TRADOC, FORSCOM &  Strategic Space Defense Command (SSDC)	1468 1809	1500 1973	1500 987	
SBIR/STTR Total	123 5848	5973	4987	
B. Budget Acquisition History and Planning Information: NOT APPLICABLE	ய			
Page 8	Page 8 of 16 Pages		A Hibit	

738

Item 85

RDT&E BUDGET ITEM JUS	M JUSTI	TIFICATION		ET (R-2	SHEET (R-2 Exhibit)	(1)		DATE Fel	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ent	PE NU <b>060</b>	PE NUMBER AND TITLE 0604715A Non-	⊓TLE Ion-Syst€	em Train	ing Devic	TITLE Non-System Training Devices Engr Dev		PROJECT <b>DC91</b>
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC91 Distributive interactive Simulation	0	3445	6139	3745	11328	2669	17063	14053	Continuing	Continuing
C. Other Program Funding Summary RDTE, Budget Activity 5 PE 06047604 Project DC81 Rattle Lab	EY 1994 0	EY 1995 6412	EY 1996 0	EY 1997 0	FY 1998 0	EY 1999 0	FY 2000 0	FY 2001 0	To Compl	Total Cost 6412
Reconfigurable Simulators RDTE, Budget Activity 4 PE 0603760A Project DC80 Battle Lab	0	8385	0	0	0	0	0	0	0	8385
Reconfigurable Simulators OPA3, Appropriation	0	0	12616	7152	0	0		0	0	19768
OMA, Reconfigurable Simulators	0	0	12100	12200	12300	12400	12500	12600	Cont'd	Cont'd
D. Schedule Profile	FY 1994 2	4	1 F 5	FY 1995 2 3	4	FY 1996 2 3	96 3 4	-	FY 1997 2 3	4
Award SEI Contract DIS Verification and Validation Simulator Upgrades Reconfigurarble Simulator Program			×							×××
			Page 9 of 16 Pages	5 Pages				Exhibit R-2	5	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JECT CO	ST BREAKD	OWN (R-3)		DATE February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	9 <sup>0</sup>	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engr Dev	-System Trai	ining Device	s Engr Dev	PROJECT DC91
A. Project Cost Breakdown						
	FY 1994	FY 1995	FY 1996	FY 1997		
Operate DIS facilities	0	1415				
Award SEI Contract	0	1958				
Develop module definition for Soldier Combat Service Support	0		2434	1395		
At early entry SIMS						
Simulation Software upgrades	0		1255			
DIS Verification and Validation	0		2450	2350		
SBIR/STTR		r,				
Total		3445	6139	3745		

B. Budget Acquisition History and Planning Information: NOT APPLICABLE

Pace 10 of 16 Paces

Exhibit R-3

740

UNCLASSIFIED

							3			
RDT&E BUDGET ITEM JUSTIFICATION	M JUSTI	FICATI	ON SHEET		(R-2 Exhibit)			DATE Fel	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060	PE NUMBER AND TITLE 0604715A Non-	TITLE Non-System Training Devices Engr Dev	em Traini	ng Devic	es Engr		Р <b>ROJECT</b> <b>D241</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D241 Non-System Training Devices Combined Arms	42790	24680	31121	31314	36732	28823	46611	31928	Continuing	Continuing
C. Other Program Funding Summary									To	Total
OPA3, Appropriation	FY 1994 78774	EY 1995 85323	FY 1996 71561	FY 1997 102660	FY 1998 70903	FY 1999 90890	FY 2000 97430	FY 2001 112246	Cont'd	Cont'd
NA0100 Training Devices, Nonsystem OPA3, Appropriation	22919	21086	22208	2609	13919	14914	33803	34802	Cont'd	Cont'd
MA6600 CTC Support OPA3, Appropriation NA0174 Fire Support Combined Arms Cactical Trainer	0	•	0	22152	21044	30190	27280	16686	Cont'd	Cont'd
D. Schedule Profile	FY 1994	- 4	F ~	Y 199	4	FY 1996 2 3	8 € 4		FY 1997 2 3	4
WARSIM Contract Award		•		×		)		ī		
JANUS CDR					×		×		×	
CSSTSS CDR CSSTSS Miletone III IPR	×	•			×					
BCTP AAR Contract Award		×	;							
AWSS Contract Award AGES II Field Development Test					×					
GUARDFIST I Milestone III				×			;			
RTC-IS IOC							<b>×</b>		×	
MI 13 OSV Milestone I/IIIA		×							!	
M113 OSV Milestone III SAWE-RF Milestone III IPR					×		×			
			:						c	
			Page 11 of 16 Pages	16 Pages				EXUIDIT K-Z	7-	
										Tion 05

RDT&E PROGRAM ELEMENT/PRC	JECT CO	PROJECT COST BREAKDOWN (R-3)	<b>JOWN (R-3</b>	DATE.	February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	20	PE NUMBER AND TITLE 0604715A Non-	E n-System Tra	DE NUMBER AND TITLE OCCUPATION DE VICES ENGR DEV	PROJECT Dev D241
A. Project Cost Breakdown					
	FY 1994	FY 1995	FY 19%	FY 1997	
System Development	42231	23485	29885	30642	
Test and Evaluation	395	979	1000	87	
Technical Data	3	S	236	585	
SBIRVSTTR		519			
Total	42790	24680	31121	31314	

B. Rudget Acquisition History and Planning Information: NOT APPLICABLE

742

Page 12 of 16 Pages

UNCLASSIFIED

Item 85

Exhibit R-3

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	IFICATION	ON SHE	ET (R-2	Exhibit	_ 1		DATE	February 1995	204
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopn	1ent	PE N.	PE NUMBER AND TITLE 0604715A Non-	PENUMBER AND TITLE  0604715A Non-System Training Devices Engr Dev	em Traini	ing Devic	es Engr	4	PROJECT D396
COST (In Thousands)	FY 1984 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	5 <b>g</b>	Total Cost
D396 Tactical Simulation (TIARA)	5173	3448	2063	2879	3205	2362	3997	3990	Continuing	Continuing
C. Other Program Funding Summary: NOT APPLICABLE	PLICABLE									
D. Schedule Profile	FY 1994		ļī.	FY 1995		FY 1996	96		FY 1997	
Software Build	2 3	3 X	1 2	8	4 X	7	€ 4×	-	2 3	4 ×
Developmental Test and Evaluation	**		×			×			×	4
		•		•				! :		
			rage 15 01 10 rages	o rages				EXNIBIT K-2	,, 	

743

BUDGET ACTIVITY         PE NUMBER AND TITLE         PE NUMBER AND TITLE         PROJECT           5 - Engineering And Manufacturing Development         0604715A Non-System Training Devices Engr Dev         PROJECT           A. Project Cost Breakdown         FY 1994         FY 1995         FY 1996         FY 1997         D396           Software Development System Engineering Configuration Management Technical Data Developmental Test and Evaluation         930         610         370         566         566           Technical Data Developmental Test and Evaluation         925         608         369         569         569         569           SBIR/STTR         Total         3448         2083         2879         9         9	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	T COST BREAK	<b>DOWN (R-3)</b>	DATE	February 1995
FY 1994 1460 1129 930 729 Mation 925	ing And Manufacturing Develop	PE NUMBER AND TIT	n-System Trai	ning Devices Engr Dev	
are Development         FY 1994         FY 1995         FY 1996         FY 1996	A. Project Cost Breakdown				
are Development     1460     938     538       n Engineering     1129     760     537       guration Management     930     610     370       uical Data     729     460     269       opmental Test and Evaluation     925     608     369       STTR     72       5173     3448     2083	FY		FY 1996	FY 1997	
n Engineering     1129     760     537       guration Management     930     610     370       uical Data     729     460     269       opmental Test and Evaluation     925     608     369       STTR     72       \$173     3448     2083			538	772	
guration Management     930     610     370       uical Data     729     460     269       opmental Test and Evaluation     925     608     369       STTR     72       \$173     3448     2083			537	587	
uical Data       729       460       269         opmental Test and Evaluation       925       608       369         STTR       72         \$173       3448       2083	Configuration Management		370	266	
opmental Test and Evaluation         925         608         369           STTR         72         72           STTR         3448         2083	Technical Data		269	385	
STTR 72 5173 3448 2083	Developmental Test and Evaluation		369	869	
5173 3448 2083	SBIR/STTR	27			
	Total		2083	2879	

B. Budzet Acquisition History and Planning Information; NOT APPLICABLE

Page 14 of 16 Pages

UNCLASSIFIED

Item 85

Exhibit R-3

RDT&E BUDGET ITEM JUS	M JUST	FICATION	ON SHE	TIFICATION SHEET (R-2 Exhibit)	Exhibit	()		DATE Fel	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE אנ 060	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engr Dev	ritle Ion-Syste	em Traini	ing Devic	es Engr		PROJECT <b>D573</b>
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D573 STRICOM and Naval Air Warfare Center Training	9041	9096	1988	10418	10611	10713	10492	10675	Continuing	10675 Continuing Continuing

C. Other Program Funding Summary: NOT APPLICABLE

D. Schedule Profile: The nature of this project does not lend itself to acquisition milestones.

Exhibit R-2

745

Page 15 of 16 Pages

RDT&E PROGRAM ELEMENT/PRO	JECT C	PROJECT COST BREAKDOWN (R-3)	<b>JOWN (R-3</b>	DATE	February 1995	1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604715A Non-	E n-System Tra	PE NUMBER AND TITLE 0604715A Non-System Training Devices Engr Dev	ngr Dev	PROJECT D573
A. Project Cost Breakdown						
	FY 1994	FY 1995	FY 1996	FY 1997		
Fund STRICOM Personnel	6505	9029	6795	6940		
Fund NAWCTSD Support	1500	1584	1689	1862		
Front End Analysis	1036	1254	1503	1616		
SBIR/STTR		3				
Total	9041	80%	2866	10418		

B. Budget Acquisition History and Planning Information: NOT APPLICABLE

Page 16 of 16 Pages

746

Exhibit R-3

Item 85

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	ION SH	IEET (R	-2 Exhib	it)		DATE Fel	February 1995	95
8u0G 5 - E	BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	evelopm	lent	PE NI 060 Dev	PE NUMBER AND TITLE 0604716A Terra Development (T	E NUMBER AND TITLE 0604716A Terrain Information - Engineering Development (TIARA)	formation 1)	n - Engin	eering	<u>a</u> 0	РRОЈЕСТ <b>D579</b>
	COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0579	D579 Field Army Map Sys Eng Dev	8375	10213	9011	7630	3214	2986	2398	1896	1896 Continuing Continuing	Continuing

development of a Multi-Spectral Imagery Processor (MSIP), which provides an image map making capability. Commercial DTSS-MSIP systems will be provided to Army Engineer Terrain Teams as an interim solution for making image maps. Using the most current technology available, the functional capabilities of DTSS and QRMP will be developed into a single interoperable architecture. The projects in this Program Element support research efforts in the engineering and manufacturing development A. Mission Description and Budget Item Justification: This program element funds development of two systems: Digital Topographic Support System (DTSS) and abor intensive processes that do not meet the needs of the digitized battlefield in which the commander must have the ability to rapidly obtain terrain information and Quick Response Multicolor Printer (QRMP). The current terrain analysis, topographic and reproduction support provided by Army Engineer Terrain Teams are slow, graphics (e.g., captured enemy maps) and other topographic and terrain products. Three blocks of Pre-Planned Product Improvements (P31) are authorized including: Command and Control systems. QRMP will provide rapid reproduction of low volume, up-to-date, large format, full color imagery maps, situation overlays, special downsizing, terrain visualization, imagery exploitation, increased internal and communications throughput, and others. Part of imagery exploitation includes the topographic products. DTSS will automate the updating and processing of terrain information into terrain analysis products and disseminate them rapidly within (E&MD) phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

provide units for formal test and evaluation. The procurement of the Multi-Spectral Image Processor (MSIP) was approved by the Army. The acquisition of the MSIP will computer workstations in conjunction with non-development items (NDI) components to develop an integrated baseline hardware configuration. The plan is to utilize the The Acquisition Strategy being pursued for the DTSS/QRMP EMD phase is to utilize Army standard equipment and the Common Hardware/Software (CHS) Combat Terrain Information System (CTIS) System Engineering and Integration (SE&I) contractor to execute the EMD phase and to perform system integration and rely on existing contracts and commercial-off-the-shelf (COTS) to the fullest extent possible.

Program Management responsibility and milestone decision authority have been assigned to the Program Executive Officer for Command and Control Systems (PEO CCS) Project management is provided by the Project Director (PD) for Combat Terrain Information Systems.

competitive Cost Plus Fixed Fee (CPFF) contract was awarded for the CTIS SE&I contract. A competitively awarded, Firm Fixed Price (FFP) contract is anticipated for the Full Rate Production of the DTSS/QRMP. The computer workstations for CTIS programs are being procured through the PM for Common Hardware and Software. The contracting strategy for the DTSS/QRMP program is to execute the EMD phase through the current SE&I contractor, Martin Marietta Corporation. A

# FY 1994 Program Accomplishments:

- Continued DTSS Block I P3I Development (5100)
- Initiated Development of DTSS-MSIP (500)
- Initiated Development of Integrated Downsized DTSS/QRMP (3275)
- Deployed and Upgraded QRMP Early Field Prototypes (500)

Page 1 of 5 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (F	(-2 Exhibit)		DATE February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604716A Terra Development (T	VE NUMBER AND TITLE  0604716A Terrain Info  Development (TIARA)	PENUMBER AND TITLE 0604716A Terrain Information - Engineering Development (TIARA)		РRОЈЕСТ <b>D579</b>
<ul> <li>FY 1995 Planned Program:</li> <li>Develop DTSS Low Rate Initial Production (LRIP) Upgrade (1699)</li> <li>Complete Development of DTSS-MSIP (300)</li> <li>Complete DTSS Block I P31 and Conduct Test and Evaluation (Software) (1000)</li> <li>Continue Development of Downsized DTSS/QRMP (6500)</li> <li>Continue P31 Program (Communications) (500)</li> <li>Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (214)</li> </ul>	re) (1000) ier (SBIR/STTR) (214	(			
<ul> <li>FY 1996 Planned Program:</li> <li>Complete Development of DTSS LRIP Upgrade (1900)</li> <li>Continue Development of Downsized DTSS /QRMP (6311)</li> <li>Continue P31 Program (Interoperability) (700)</li> <li>Initiate Test and Evaluation of EMD Prototypes (100)</li> </ul>					
<ul> <li>FY 1997 Planned Program:</li> <li>Complete Development of Downsized DTSS/QRMP (4800)</li> <li>Complete Test and Evaluation of Developmental Prototypes (500)</li> <li>Continue P31 Program (Interoperability) (2330)</li> </ul>					
B. Program Change Summary Previous President's Budget Appropriated Value Adjustments to Appropriated Value SRIR/STTR decrement (148)	10213 EY 1995 13 10547 13 10213	EY 1996 8527	EY 1997 6580		
Current President's Budget 9375	10213	9011	7630		
Change Summary Explanation:  Funding: Funding profile was restructured to reflect approved April 1994 CTIS Modernization Plan. This plan approved the downsizing of the DTSS/QRMP systems, resulting in minor RDT&E and Other Procurement, Army appropriation adjustments.  Schedule: Since the previous President's budget submission, revisions to the program schedule have become necessary in response to requirements identified in the CTIS Modernization Plan.	oril 1994 CTIS Moder y appropriation adjus ions to the program s	nization Plan. Tł tments. chedule have beo	iis plan approved the do	wnsizing of the DTSS/C	RMP tifted in
Technical: No change to technical requirements as a result of CTIS Modernization Plan	S Modernization Plan				
	Page 2 of 5 Pages			Exhibit R-2	
	97				Item 86

748 UNCLASSIFIED



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATI(	N SHE	ET (R-2	Exhibit			DATE Feb	February 1995	[ %
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ant	PE NU 060	PE NUMBER AND TITLE 0604716A Terra Development (7	PENUMBER AND TITLE  0604716A Terrain Information - Engineering  Development (TIARA)	ormation )	ı - Engin	eering		
C. Other Program Funding Summary									Ę	Total
OPA - KA2550 - DTSS	FY 1994 10412	FY 1995 7779	EY 1996 6954	FY 1997 6683	FY 1998 8160	FY 1999 5110	FY 2000 1988	FY 2001 2486	Compl	CONT
D. Schedule Profile	FY 1994	•	E ,	FY 1995	•	FY 19%	, , Q	- `	FY 1997	
Achieve DTSS First Unit Equipped (FUE) MSIP Mission Need Statement Approved Initiate Procurement of MSIP Hardware Award Downsized DTSS/QRMP EMD Task Order Conduct MSIP Beta Testing Initiate Delivery of MSIP to Terrain Teams Develop DTSS LRIP Upgrades Incorporate DTSS LRIP Upgrades Conduct Downsized DTSS/QRMP Developmental Test and Evaluation/Operational Test and Evaluation (DT&E/OT&E) Initiate Fielding of Upgraded DTSS LRIP Systems Downsized DTSS/QRMP MS III	~ * * * *	•	* * *		•	×	<b>*</b> ×	· -		÷ ×
			Pare 3 of 5 Pares	Pages				Exhibit R-2	Q.	

RD	RDT&E PROGRAM ELEMEN	RAM ELI	EMENT/PR	T/PROJECT (	SOST BI	REAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	95
BUDGET ACTIVITY 5 - Engineeri	subget Activity 5 - Engineering And Manufacturing Develo	rfacturing	Development	<b>1</b>	PE NUMBER 060471 Develor	PE NUMBER AND TITLE 0604716A Terrain Inf Development (TIARA)	In Informa ARA)	PENUMBER AND TITLE 0604716A Terrain Information - Engineering Development (TIARA)	ineering		PROJECT D579
A. Project Cost Breakdown	Breakdown										
				FY 1994		FY 1995	FY 1996	FY 1997	2		
Primary System Development	evelopment			2500		2400	2900	1100			
Software Development	ment			2600	_	2700	1900	800	•		
Government Furnished Equipment	ished Equipment			0	•	200	0	0	•		
Government Engineering Support (includes Test Support)	neering Support (	includes Test !	Support)	1600	•	1700	1300	2800	•		
Contractor Engineering Support	ering Support			1100	_	<b>06</b>	906	906	•		
Licenses and Maintenance Project Management and Administration	ntenance ent and Administer	ation		75 1500	<b>15. -</b>	313 1700	311	330	0.0		
Total				9176		<b>•</b> 10013	5	0676			
				-164		61701	1104	160/			
SBIR/STTR (214)											
B. Budget Acquisition History and Planning Information	sition History and	d Planning In	formation								
Performing Organizations	mizations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to	Ì		İ	j	Budget to	Total
Product Development Organizations	<u>veinsie</u> nent Organizatio	Tale ne	בטר	EAL	17.74	11 1994	FY (3%)	FY 1996	FY 1997	Complete	Program
Loral Defense	C/CPFF/FFP	7/87	35157	35157	32700	2400	0	0	0	C	35100
/\kron, OH	Prod Option							•	•	•	
Martin Marietta	C/CPFF	1/93	17000	17000	1500	2700	5100	4800	1900	CONT	CONT
Ft Wash, PA						3 .	•				
Sup yort/TEC						6/61	5107	1107	7030		CONI
Support and Management Organizations	nagement Organi	zations									
CSC	C/FFP					400	400	400	400	CONT	CONT
Fair ax, VA											
				Page	Page 4 of 5 Pages	Ş			Exhibit R-3	-3	
					750						Item 86

RDT&E PROGRAM ELEMENT	<b>JGRAM EL</b>	EMENT/PRO	/PROJECT COST BREAKDOWN (R-3)	OST BE	<b>EAKDO</b>	WN (R-3		DATE F.	February 1995	98
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	anufacturing	Development		PE NUMBER AND TITLE 0604716A Terra Development (1	E NUMBER AND TITLE 0604716A Terrain Inf Development (TIARA)	PE NUMBER AND TITLE  0604716A Terrain Information - Engineering  Development (TIARA)	ion - Engi	ineering		
Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle MITRE Corp FFRDC thru	ype Award or g Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to	EY 1994 700	FY 1995 500	EY 1996 500	FY 1997 500	Budget to Complete	Total Program
					1300	1300	1000	1800	CONT	CONT
TECOM MIPR					300	400	300	1000	CONT	CONT
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle Product Percebanical Property	rty ype Award or g Obligation Date	Delivery Date		Total Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
CHS Computers MIPR Support and Management Property	30 Oct 94	30 Jan 95			0	200	0	0	CONT	CONT
Test and Evaluation Property					0	0	0	0	CONT	CONT
					0	0	0	0	CONT	CONT
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project  Prior year funding only covers the Prime Contractors. FY 95 SBIR/STTR (214)	ent s the Prime Contra	ctors. FY 95 SBIR.	/STTR (214)	34200	EY 1994 6675 2400 300 9375	EY 1995 7613 2200 400 *10213	EY 1996 6811 1900 300 9011	FY 1997 3930 2700 1000 7630	Budget to Complete CONT CONT CONT CONT CONT	Program CONT CONT CONT CONT

751

Page 5 of 5 Pages

Exhibit R-3

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAT	ION SH	IEET (R	-2 Exhib	oit)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NI 060	PE NUMBER AND TITLE  0604740A Tactical Surveillance System - Engineering Development (TIARA)	TITLE Tactical S	urveillar	ICE Syste	- E	ž O	PROJECT D662
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to	Total Cost
D662 Tectical Surveillance System - Eng Dev	37534	2083	0	0	0	0	0	0	0	N/A

intelligence and targeting needs of tactical commanders, as stated in Field Manual 100-5 and under Airland Battle tactics, to fight out-numbered and win. Specific tactical Enhanced Tact cal Radar Correlator (ETRAC) and DOD's Common Synthetic Aperture Radar Processor (CSARP), and provide program management support to the Joint Services Image y Processing System (JSIPS) Program Office (JPO). The MIES receives and processes imagery from National and tactical sources to generate intelligence reports and exploited imager products to the field commander. The CSARP processes the signals from Synthetic Aperture Radars (SAR). The ETRAC contains the DoD operations. The project in this PE supports research efforts in the engineering and manufacturing development phases of the acquisition strategy and is therefore correctly efforts to main ain sensor interfaces, modernize the existing Modernized Imagery Exploitation Systems (MIES), perform engineering development of the hardware of the imagery exploi ation studies and developments are under the Army's Tactical Exploitation of National Capabilities (TENCAP). This Program Element (PE) includes CSARP and is i C-130 drive on/off system that receives inputs from various platforms, converts the SAR to a visual image, and is capable of stand alone contingency A. Mission Description and Budget Item Justification: In FY94 and prior, this project supported engineering development work directed at meeting the deep placed in Budget Activity 5.

(GSD), which is part of the Common Baseline effort, is a jointly funded program to develop a means to computer generate, transmit, and display graphical representations Technology Assistance (SETA) activity. In FY 95, all funds directly related to the development of MIES, ETRAC and JPO support are moved to PE #0305154D, DARP. conflicts. TENCAP Common Baseline (Cmn Bsln) addresses common subsystems, planned improvements, key activities and ongoing planned initiatives determined to ETRAC from the Topographic Engineering Center (TEC), Federally Funded Research And Development Centers (FFRDC), and Contractor Systems Engineering and In a parallel action, the sipport efforts remaining in this PE were consolidated under Project D909 beginning in FY 96. Further details may be found in the Tactical have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the DARP (PE 0305154D)). Graphic Situation Display Project D662 "actical Surveillance System Engineering and Manufacturing Development: These systems will provide direct operational access to National and Military Exploi ation of Reconnaissance and Intelligence Technology (MERIT) funds. This PE also provides technical and engineering support efforts to MIES and theater imagery in near-real-time to provide critical, deep target intelligence support to tactical commanders and to support contingency missions and low intensity to the battle spc at thereby saving communication bandwidth, manpower and time. The beta software portion of GSD development effort was funded in FY 93 with Intelligence and Related Activities (TIARA) Congressional Justification Book, Volume II, and the TENCAP Master Plan.

Page 1 of 7 Pages

Exhibit R-2

Item 87

7

RDT&E BUDGET ITEM JUST	IFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604740A Tactical Surveillance System -	PROJECT D662
7 7007 753	Engineering Development (TIARA)	
Fr 1994 Accomplishments:		

- Completed second MIES and integrated into existing Imagery Exploitation System (IES) at USAREUR (100)
  - Upgraded all MIESs with 168 giga bytes of memory (7 full days of on-line storage). (4226)
    - Integrated GSD into all MIESs. (679)
- Upgraded all MIES with National/tactical fiber optics interfaces for real-time connectivity with TRAC/ETRAC. (2427)
- Initiated development of 3rd MIES to replace defielded Imagery Processing and Dissemination System (IPDS). (4763)
  - Continued jo nt support within JSIPS program. (6800)
- Continued hardware development for integration of ETRAC and DoD CSARP. (16331)
- Continued Contractor Systems and Engineering Technology Assistance (SETA) to TENCAP program from FFRDC (Aerospace). (397)
  - Continued SETA to TENCAP program from TEC. (480)
    - Continued Contractor SETA to TENCAP program. (1331)

# FY 1995 Planned Program:

- Initiate installation of GSD into all Forward Area Support Terminal (FAST) systems. (759)
  - Continue SFTA to TENCAP program from FFRDC (Aerospace). (551)
    - Continue Contractor SETA to TENCAP program. (739)
- Small Busines s Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (44)

# FY 1996 Planned Program:

All efforts in this project transferred/consolidated under PE 0604766A (Project D909), Tactical Exploitation of National Space Capabilities Program (TENCAP) -Engineering Development, Project D909, Tactical Electronic Surveillance System, Engineering Development.

Page 2 of 7 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUS	STIFICATION SHEET (R-2 Exhibit)	SHEET (R	-2 Exhibit)		DATE February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	pment	PE NUMBER AND TITLE 0604740A Tact Engineering De	D TITLE  Tactical Su  Ng Developn	PE NUMBER AND TITLE 0604740A Tactical Surveillance System - Engineering Development (TIARA)		PROJECT D662
B. Program Change Summary						
Previous President's Budget Appropriated Value Adjustments to Appropriated Value	EY 1994 38734 38734 -1200	EX 1995 2121 2093	FY 1996 1158	FY 1997 1086		
b. Reprogrammed out of PE (-600)  Current Budget Submit/President's Budget	37534	2093	0	0		
Change Summary Explanation:						
Project D662 - Tactical Surveillance System - Engineering	g Development					
Funding: IN FY 96, THE ARMY CONSOLIDATED THE REMAINING PES SUPPORTING THE ARMY TACTICAL EXPLOITATION OF NATION	IE REMAINING P	Es SUPPORTIN	G THE ARMY	TACTICAL EXPLOI	REMAINING PES SUPPORTING THE ARMY TACTICAL EXPLOITATION OF NATIONAL ROLLECT 643 WAS CONSOLIDATED WITH PE 04047444 (BBO IECT 1909 IN EV 94 AND	ξ

Airborne Reconnaissance Office (DARO), the Department of the Army continues to support these development efforts on their behalf. Funding to support these DARO BEYOND. AS A PART OF THIS SAME ACTION, PE 0603730A/PROJECT D560 WAS CONSOLIDATED WITH PE 0603766A/PROJECT D907 IN FY 96 AND BEYOND. These PEs/Projects were consolidated because in FY 95 all funds directly related to the development of IES and ETRAC and support to the JSIPS Program that were funded under Project D560 and D662 in FY94 were moved to OSD PE 0305154D, DARP. Even though the funds have been moved to the Defense CAPABILITIES (TENCAP) PROGRAM. PE 0004740A/PROJECT 062 WAS CONSOLIDATED WITH PE 0604766A/PROJECT D909 IN FY 96 AND efforts (ASPO salaries and expenses, TEC, FFRDC, Contractor SETA, and certain studies) remain in this PE and are still required.

Schedule: None

Technical: None

Page 3 of 7 Pages

Exhibit R-2

Item 87

754

			ONCLASSIFIED	ורובט		į	4			
RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TEM JUSTI	FICATIO	ON SHE	ET (R-2	Exhibit	(		DATE <b>Feb</b>	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	ng Developm	ent	PE NU 060	PE NUMBER AND TITLE 0604740A Tact	PENUMBER AND TITLE OGO 4740A Tactical Surveillance System	urveillan	ce Syste	].	ž ŏ	PROJECT D662
:			Eng	lineering	Engineering Development (TIARA)	ment (TI/	ARA)			
C. Other Program Funding Summary									To	Totai
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	8
RDTE, A Budget Activity 4 PE 0603766A Project D907										
TENCAP-Adv Dev	15069	14815	28369	26913	23935	28057	29377	34319	Cont	Cont
PE 0603730A Project D560 Tact Sury Sys - Adv Dev	14140	11717	c	c	c	c	c	•		
RDTE, A Budget Activity 5			•	•	•	•	•	>		*
TENCAP - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28533	Cont	Cont
RDTE, D Budget Activity 7 PF 0305154D Project Decay										
DARP	0	40017	33833	37216	12390	6328	6328	6328	Cont	Cont
Other Procurement, Army, OPA-2	1	,								
BZ 7315 TENCAP	1729	4636	4617	1807	1784	1853	4971	14916	Cont	Cont
Procurement, Defense Wide	1761	1147	>	>	>	>	>	>	ď	₹ Ž
0305154D, DARP	0	င	88700	123400	77900	00169	71400	73300	Cont	Cont
D. Schedule Profile										
	FY 1994		E	Y 1995		FY 199	92		FY 1997	
	1 2 3	4	1 2	2 3	4	2 3	3 4	-	2 3	4
Complete Development 2nd MIES and Integrate into existing IES Initials Development of 3rd MIES	×									
Complete Development and Field 3rd	•			×						
See Project Army D909 and OSD PE 0305154D, Project P531		r Milestone	or Milestones in FY 95 - FY 97.	FY 97.						
			Page 4 of 7 Pages	Pages				Exhibit R-2		
			755							Item 87

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	EAKDOWN	(R-3)		DATE February 1995	
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PENUMBER AND TITLE 0604740A Tact Engineering De	PENUMBER AND TITLE 0604740A Tactical Surveillance System - Engineering Development (TIARA)	illance Syste t (TIARA)		
A. Project Cost Breakdown					
EV 1994	FY 1995	FY 1996	FY 1997		
System Development.  Common Baseline (*2) 679	759	See Proj D909	See Proj D909		
Subtotal System Development 28526	(*1) 759				
System Engineering (Contractorite) # 397	551 783	<b>See Proj</b> D909	See Proj D909		
	0	3	3		
*3, *4)	1334	3	3		
Total 37534	2093	0	0		
(*1) In FY 95, all development efforts for these systems moved to PE 0305154D (Defense Airborne Reconnaissance Program (DARP), Project P531	Defense Airborne F	Reconnaissance Pr	ogram (DARP), F	Project P531	
(*2) In FY 96 and beyond, this PE/Project is consolidated under PE 0604766A (TENCAP - Eng Dev), Project D909 (Tactical Electronic Surveillance System - Eng Dev).	ENCAP - Eng Der	v), Project D909 (7	Factical Electroni	c Surveillance System - Eng Dev	<u>.</u>
(*3) In FY 95, \$6.8M of this line funds Army's share of support to JPO to support the ongoing JSIPS Program. This effort moved to PE 0305154D (DARP), Project P531 in FY 95.	the ongoing JSIPS	3 Program. This e	fort moved to PE	8 0305154D (DARP), Project P5	31
(*4) In FY 95, these funds support the system being developed under PE 0305154D (DARP), P531.	) (DARP), P531.				

Page 5 of 7 Pages 756

Exhibit R-3

RDT	&E PROG	RAM ELE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	JJECT (	SOST BE	EAKDO	WN (R-3)		DATE F	February 1995	96
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	) And Manu	facturing C	evelopment		PE NUMBER AND TITLE 0604740A Tact Engineering De	AND TITLE  A Tactic ring Deve	PENUMBER AND TITLE 0604740A Tactical Surveillance System Engineering Development (TIARA)	ance Syst	- E		PROJECT <b>D662</b>
B. Budget Acquisition History and Planning Information	ion History and	Planning Infe	ormation								
Performing Organizations	zations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Product Development Organizations	t Organizations										
TEC (MIES)	MIPR	4094	ΥX	<b>4</b> /Z	V/N	11516	*	•	•		·
Classified ETRAC	MIPR	30,3	Y/X	Y S	10365	13444	* 6	* 1	• 1		
CmnBln)	MIFR	G	ďŽ	∢ Ž	<b>&gt;</b>	8/0	66/	•	•		
Support and Management Organizations	ment Organizat	ions									
ESC (JSIPS Sys	MIPR	20-4094	N/A	K/X	N/A	0089	•	•	•		
Classified (Sys Eng	MIPR	1Q EA FY	N/A	Y/X	Y/X	1331	783	:	:		
SSD/FDEA	MIPR	1Q EA FY	Y/X	N/A	N/A	397	551	<b>:</b>	*		
TEC (Sys Eng Cont)	MIPR	1Q EA FY	N/A	N/A	V/A	480	0	:	:		
Test and Evaluation Organizations	Organizations										
None											
				Page	Page 6 of 7 Pages	ŝo			Exhibit R-3	ဗ္	

757

RDT&E PRO	OGRAM ELI	EMENT/F	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	BREAKDO	WN (R-:	3)		DATE F	February 1995	295
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ng And Manuf	facturing l	Development	PE NUMBER AND TITLE 0604740A Tact Engineering De	PENUMBER AND TITLE 0604740A Tactical Surveillance System - Engineering Development (TIARA)	al Surveil	lance Syst (TIARA)	1		PROJECT <b>D662</b>
Covernment Furnished Property	ished Property									
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Delivery Date	Total Prior to EY 1994	EY 1994	EY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property	bent Property									-
Modularized Interoperable Surface Terminal (MIST) (ETRAC)	MIPR	2093	20%	3416	2887	•	•	•		
Support and Management Property	agement Property	•								
None										
Test and Evaluation Property	ion Property									
None										
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Subtotal Government Furnished Property Total Project * See PE 0305154D, P531 ** See PE 0604766A, D909	Sevelopment and Management Evaluation ent Furnished Proj D, P531 5A, D909	perty		Total Prior to EY 1994 N/A N/A N/A N/A N/A N/A N/A N/A N/A	EY 1994 25639 9008 0 2887 37534	EY 1995 759 1334 0 2093	EY 1996	EY 1997	Budget to Complete	Total Program
				Page 7 of 7 Pages	53			Exhibit R-3	53	

758

Item 87

RDT	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAL	TION SH	IEET (R	-2 Exhib	olt)		DATE <b>Fel</b>	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	d Manufacturing L	Developm	ent	PE NI 000	PENUMBER AND TITLE 0604741A Air D	PENUMBER AND TITLE OGO 4741A Air Def Cmd, Cntl & Intel-Engr Dev	nd, Cntl	& Intel-Er	igr Dev		
COST (in Thousands)	housands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
Total Program Element (PE) Cost	(PE) Cost	17526	28136	22030	21143	15338	2044	6894	7961	Continuing	Continuing
D126 FAAD Command and Contol Engineering Development	ontol Engineering	17526	28002	21036	21143	15338	2044	<b>6894</b>	7981	111902	655100
D146 Air Defense Tactical Operations Center	erations Center	0	0	988	0	0	0	0	0	Continuing	Continuing
D2JT FAAD C2 Operational Test	<b>J</b>	0	134	0	0	0	0	0	0	Continuing	Continuing

Division Interim Sensor (LSDIS), Global Positioning System (GPS), Airborne Warning and Control System (AWACS), Ground Based Sensor (GBS), and the Army Battle FAAD C2 engagement operations software using Common Hardware/Software (CHS), Standard Integrated Command Post System (SICPS), Enhanced Position Location Command System (ABCS) architecture. The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the process and disseminate target information, air threat warning, and command and control information to all FA 'D weapons (AVENGER, Bradley STINGER Fighting forward area air defense automated information to support the command and control decision process at various levels of command. The mission is to collect, digitally Vehicle (BSFV), Manportable Air Defense System (MANPADS), and combined arms). Unique FAAD C2I software will provide the mission capability by integrating Reporting System (EPLRS), Joint Tactical Information Distribution System (JTIDS), Single Channel Ground and Air Radio System (SINCGARS), Light and Special A. Mission Description and Budget Item Justification: The Forward Area Air Defense Command, Control and Intelligence (FAAD C21) System provides critical acquisition strategy and are there ore correctly placed in Budget Activity 5.

FAAD weapons to provide accurate and timely command, control and targeting information for the weapon systems. The system utilizes non-developmental item sensors, computers, displays and interface hardware integrated with data communication equipment. It automates mission related functions and uses the Single Channel Ground Project D126 - FAAD Command and Control Eng Dev: The Forward Air Defense Command and Control (FAAD C2) System is an automated system deployed with and Airborne Radio Systems (SINCGARS) for voice and the Army Data Distribution System (ADDS) for data.

# FY 1994 Program Accomplishments

- Continued Block II Software Development (12786)
- Conducted Block II Development Test (2440)
- Awarded Block III Development Contract (300)
- ATCCS III Testing Support (2000)

# FY 1995 clanned Program

Conducted Block II IOTE (6808)

Exhibit R-2

Item 88

Page 1 of 10 Pages

# RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

BUDGET ACTIVITY

5 - Engineering And Manufacturing Development

DATE February 1995

0604741A Air Def Cmd, Cntl & Intel-Engr Dev

PE NUMBER AND TITLE

Continue Block III Software Development (17433)

Prepare for Milestone III Decision Review -- Heavy Division (650)

Prepare for First Unit Equipped -- Heavy Division (600)

Congressionally Directed Sensor Study (2000)

Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (511)

# FY 1996 Planned Program

Continue Block III Software Development (19606)

• Prepare for Block III Users Test (800)

Prepare for Technology Insertion (629)

# FY 1997 Planned Program

Conduct Block III Users Test (UT) (2000)

Continue Block III Software Development (18339)

Prepare for Block III Development Test (DT) (804)

production decisions. Operational testing is conducted under conditions, as close as possible, to those encountered in combat with typical user troops trained to employ the The FAAD C21 is an Acquisition Category (ACAT) ID system with a dedicated Initial Operational Test and Evaluation (IOTE) in FY 1995 in support of Milestone III full testing and evaluation of the Forward Area Air Defense Command, Control, and Intelligence (FAAD C21) by the Operational Test and Evaluation Command (OPTEC) Project D2JT - Forward Area Air Defense Command and Control Operational Test: This project finances the direct costs of planning and conducting operational system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Project D2JT is not a new start. It is restructured from PE 0605712, Support of Operational Testing, Project D001, OPTEC IOTE. In FY 1995 funding for operational testing of ACAT I systems is programmed with the PE funding for each system. Future fiscal years will be reprogrammed when system information becomes available.

FY 1994 Program: Program unfunded in FY 1994

# FY 1995 Planned Program

Con duct FAAD C2I IOTE (131)

SBIR/STTR (3)

FY 1996 Planned Program: Program unfunded in FY 1996

FY 1997 Planned Program: Program unfunded in FY 1997

Page 2 of 10 Pages

Exhibit R-2

36

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)   Parie February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE
5 - Engineering And Manufacturing Development	0604741A Air Def Cmd, Cntl & Intel-Engr Dev
Project D146 - Air Defense Tactical Operations Center: Air Defense Artillery (ADA) requires a standardized, integrated, automated command post (CP) and fire	(ADA) requires a standardized, integrated, automated command post (CP) and fire
direction center (FDC) capability that will fully interoperate with all US Army and Joint C31 and Air Defense systems, and selected systems of allied nations. These	Joint C31 and Air Defense systems, and selected systems of allied nations. These
capabilities will be incorporated in an Air Defense Tactical Operations Center (ADTOC). The ADTOC must incorporate air defense and theater missile defense force	TOC). The ADTOC must incorporate air defense and theater missile defense force
operations and engagement operations functions into a single command, control, communications and intelligence system. Project D146 finances the direct costs of	ommunications and intelligence system. Project D146 finances the direct costs of
developing an ADTOC that will be used to provide a single system command, conti	developing an ADTOC that will be used to provide a single system command, control, communications, and intelligence system that will support the requirements of any
air defense weapon system at any echelon of Corps and below. This is not a new sta	This is not a new start. These efforts were previously funded under Project D126.

FY 1994 Program: Program unfunded in FY 1994

FY 1995 Planned Program: Program unfunded in FY 1995

FY 1996 Planned Program

Development and integration studies (995)

FY 1997 Planned Program: Program unfunded in FY 1997

B. Program Change Summary	FY 1994	FY 1995	FY 1996	FY 1997	
Previous President's Budget	15410	26494	22056	21139	
Appropriated Value	15410	28136			
Adjustments to Appropriated Value	+2116				
a. SBIR/STTR decrement (-184)					
b. HQDA reprogramming (+2300)					
Current President's Budget	17526	28136	22030	21143	
Change Summary Explanation:					

Project D126:

Funding: FY94 reprogramming to enable Development Test (DT) to remain on schedule and to cover OPTEC requirement in FY94. \$1M restructured to D146 in FY 96 to finance direct costs of developing an ADTOC. FY 95 (+2M) added for Congressionally directed Sensor Study.

Schedule: None

Technical: None

Project D146:

Funding: \$1M restructured into this project in FY 96 to finance direct costs of developing an ADTOC.

Schedule: None

Technical: None

Page 3 of 10 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUST	TSUC M	FICATI	ON SHE	ET (R-2	<b>LIFICATION SHEET (R-2 Exhibit)</b>			DATE FeI	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060	PE NUMBER AND TITLE O604741A Air D	Air Def Cmd, Cntl & Intel-Engr Dev	nd, Cntl &	& Intel-Er	ngr Dev	E 0	PROJECT <b>D126</b>
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
D126 FAAD Command and Contol Engineering Development	17526	28002	21035	21143	15338	20.4	7669	7987	111902	655100
C. Other Program Funding Summary									Ē	Total
BDTE DE10 - FAAD GRG	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compi	Cost
OPA 2, WKS053 - FAAD GBS	7900	63855	44678	53282	46776	44438	64327	69010	CONT	CONT
OPA 2, AD5050 - FAAD C2 Spains (BA 9702/MA 9702/BS9702)	13300	14150	32942	38236	16811	12628	0	0	00	128067
Spares (BS9732)			2634	4040	5672	2868			>	18214
D. Schedule Profile		1994		FY 1995		FV 1996	%		FY 1997	
	1 2	4	_	2 3	4	. 7	3 4		2 3	4
Conduct Block II Development Test Initiate Block III Software Development Conduct Block II IOT&E		**	*	>						
Complete Block II Software Development First Unit Equipped Initial – Heavy Division				<	××				;	
Conduct Block III Users Test									<b>×</b>	
		İ	Page 4 of 10 Pages	) Pages				Exhibit R-2	Q	

RDT8	RDT&E PROGRAM ELEMENT	SAM ELE	MENT/PRO	PROJECT C	OST BR	EAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering AnJ Manufacturing Developn	An J Manufa	acturing D	evelopment		PE NUMBER AND TITLE 0604741A Air D	AND TITLE A Air Def	PE NUMBER AND TITLE OGO CHT & Intel-Engr Dev	ti & intel-E	Ingr Dev	£ 0	PROJECT D126
A. Project Cost Breakdown Major Contract Support Contract PMO/In-house/Other GFE/Testing	ik down			FY 1994 9528 775 2883 4340 17526	FY 1995 17500 1000 2694 6808	Y 1995 17500 1000 2694 6808	FY 1996 16500 1000 3335 200 21035	EY 1997 15000 1000 3143 2000 21143			
* SBIR/STTR (511).  B. Budret Acquisition History and Planning Information	n Bistory and	Planning Info	rmation								
Performing Organizations Contractor or Government Meth Performing Activity or Fu	ations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Product Development Organizations TRW C/CPIF TRW SS/CPIF TRW SS/CPIF TRW SS/T&M Matrix (RDEC) MIPR Sensor Study TBD	C/CPIF SS/CPIF SS/CPIF SS/T&M MIPR TBD	Sep 86 Aug 92 Sep 94 Sep 93 TBD	178000 50106 53194 4900	178000 50106 53194 4900	176233 15806 0 0	228 9000 300 0 1132	7100 7400 1000 1031 2000	14000 2500 1900	14000 1000 1800	CONT	176461 31906 CONT CONT CONT
Support and Management Organizations SETA, CAS SS/CPFF Feb SETA, TBD C/CPFF In-House/ Other	ement Organiza SS/CPFF C/CPFF	ations Feb 91	9400	9400	6606	775	1000	1000	1000	CONT	CONT
Test and Evaluation Organizations ADATD, Ft Bliss OPTEC	Organizations					2440	8099		2000	CONT	CONT 2000
				Раке	<u>Page 5 of 10 Pages</u> 763	S			Exhibit R-3	5-	Item 88

RDT&E PROGRAM ELEMENT/	GRAM EL	EMENT/PROJECT COST BREAKDOWN (R-3)	COST BE	SEAKDO	WN (R-3	(	F	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ufacturing	Development	PE NUMBER AND TITLE 0604741A Air C	AND TITLE	DE04741A Air Def Cmd, Cntl & Intel-Engr Dev	iti & Intel-	Engr Dev		
Government Furnished Property Contract	Å								
		; ,	Total						1
	Obligation	Delivery	Prior to			Ì		Budget to	Total
Description Venicle	Date	Date	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Property				000	90	50		FNCO	
S	1988		0009	3	8	3			0009
Support and Management Property: None Test and Evaluation Property: None	erty: None None								
			Total						1
			Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Subtotal Product Development			198039	10860	18731	18600	16800	CONT	CONT
Subtotal Support and Management	#		6606	2226	2663	2435	2343	F 5	
Success and Evaluation  Total Project			207138	17526	*28002	21035	21143		
									<u> </u>
*SBIR/STTR (511).									
									<del></del>
		á	Page 6 of 10 Pages	6			Exhibit R.3	· «	
		3 7	oxe o of to Cax	3				<u></u>	
									Ten 88

5 - Engineering And Manufacturing Development 6 - Engineering And Manufacturing Development 7 - 1996  COST (in Thousands) FY 1994  D. Schedule Profile  PET 1994  ADTOC Development  ADTOC Development  Summary Not Applicable  FY 1994  ADTOC Development  TY 1994  ADTOC Development	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	T (R-2	Exhibit	(;		DATE <b>Fel</b>	February 1995	95
1995 FY 19 Control of the section of	PE NUME	PE NUMBER AND TITLE OG04741A Air D	ITLE Ir Def Cn	nd, Cntl 8	PENUMBER AND TITLE OF CMD. Cntl & Intel-Engr Dev	nar Dev	E O	PROJECT D146
7 1994 3 4 1	FY 1996 F Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
C. Other Program Funding Summary Not Applicable  D. Schedule Profile FY 1994  ADTOC Development  ADTOC Development	88	0	0	0	0	0	Continuing	Continuing
	È	FY 1995		FY 19%	<b>%</b>		FY 1997	_ <del></del>
	1 2	m	4 -×	7	£		2 3	4
						######################################		
0 ( 3 %)	rake / of to rakes	COKES					7.	1, and 00

765

RDT&E PROGRAM ELEMENT/PROJECT		OST BR	EAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604741A AIF C	AND TITLE A Air De	TITLE Air Def Cmd, Cntl	iti & intel-	& Intel-Engr Dev		PROJECT <b>D146</b>
A. Project Cost Breakdown Development Efforts Total	FY 1994	FY	FY 1995	FY 1996 995 995	FY 1997	~,		
ning Organizations  for or Contract  ment Method/Type Award or Performing  or Funding Obligation Activity	P vject Office	Total Prior to					Budget to	Total
! :t Developmen	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
TBD TBD Support and Management Organizations: None Test and Evaluation Organizations: None Government Furnished Property: None					995		CONT	CONT
Subtotal Product Development Subtotal Support and Management Subtotal Test and Firstlustion					995		CONT	CONT
Total Project					866		CONT	CONT
	Page	Page 8 of 10 Pages				Exhibit R-3	3	
	ONCI	766 UNCLASSIFIED	C					Item 88

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATION	ON SHE	ET (R-2	Exhibit	a		DATE F.	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	Developm	ment	PE NC	PE NUMBER AND TITLE 0604741A Air D	IITLE Vir Def Cr	TITLE Air Def Cmd, Cntl & Intel-Engr Dev	k Intel-Er	ngr Dev	# O	PROJECT D2JT
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1986 Estimate		FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2JT FAAD C2 Operational Test	0	\$	0	0	0	0	0	0	Continuing	Continuing
C. Other Program Funding Summary	EY 1994	FY 1995	FY 1996	EY 1997	FY 1998	EY 1999	EY 2000	FY 2001	Compl	Total
KD1E, A 0604820 Radar Development -   FAADC31 Oper Test - D2IT		4951								4951
D. Schedule Profile	7 199	_	įr,	7 199		FY 1996	×		FY 1997	
FAADC2 IOTE	2	4	× - ×	m	4	7	ω 4	-	3	4
			Page 9 of 10 Pages	0 Pages			-	Exhibit R-2	2	
										TA. 000

RDT&E PROGRAM ELEMENT/PROJEC	PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604741A Air C	PENUMBER AND TITLE OGO4741A Air Def Cmd, Cntl & Intel-Engr Dev	f Cmd, Cn	iti & Intel-I	Engr Dev		PROJECT D2JT
viect Cost Breakdown 8	FY 1994 FY	FY 1995 134	FY 1996	FY 1997	- 1		
Total  B. Budret Acquisition History and Planning Information		134					
Performing Organizations  Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC Product Development Organizations: N/A Connect and Management Organizations: N/A	Total  Prior to  EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations OPTEC Government Furnished Property: None			134				134
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			134 134				134
	Pare 10 of 10 Pares	ses			Exhibit R-3	<b>6-3</b>	

768

Item 88

		, 					•	چر	,	
RDT&E BUDGET ITEM JUST	M JUST	FICATI	ON SHE	ET (R-2	TIFICATION SHEET (R-2 Exhibit)	()		DATE FeI	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604746A Auto Development	PENUMBER AND TITLE 0604746A Automatic Test Equipment Development	: Test Eq	uipment			
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
Total Program Element (PE) Cost	19926	15612	5437	2878	2848	2818	3747	3741	Continuing	Continuing
DL10 Electro-Optic (EO) Test Equipment	1302	4740	0	0	0	0	0	0	0	24702
DLS9 Diagnostic/Expert System Development	13478	7892	5437	2878	2848	2818	3747	3741	Continuing	Continuing
D537 Integrated Family of Test Equipment	5146	2880	0	0	0	0	0	0	0	66312

# A. Mission Description and Budget Item Justification

which will reduce the Army's investment in test program sets (TPS) and in maintenance publications and procedures. These projects are appropriately assigned to Budget requirements into the next century. This program element further provides for identification and evaluation of the capabilities of nondevelopmental items (NDI) to satisfy levels of maintenance for ATE to support complex communications and electronics-intensive commodities such as missiles, aircraft, and combat vehicles. The Integrated Activity 5 since they provide for engineering and manufacturing development of new ATE systems to meet the test and diagnostic requirements of the Army's weapons requirements for manual and semi-automatic general purpose test, measurement, and diagnostic equipment (TMDE) at the division level. Expert systems and artificial intelligence applications are also being developed under this program element to provide paperless maintenance manuals/procedures and battlefield electronic displays Family of Test Equipment (IFTE), with improvements as required to keep pace with technologies employed in the supported weapons systems, can meet these mission across equipment commodities and to meet operational readiness needs of sophisticated systems and state-of-the-art technologies. An urgent requirement exists at all This program element provides for development of modular, reconfigurable Automatic Test Equipment (ATE) to satisfy test and fault isolation requirements systems and for incorporation of state-of-the-art technologies into the Army's ATE systems.

and is in concert with Army and DOD policy on standard ATE. Program has been restructured and continuing effort is funded under Project DL59 beginning in FY 1996. esting capability at organizational and direct support levels for certain weapons systems and critical parameters of other systems cannot be measured at the organizational levels because EO test equipment is not available. The test equipment being developed under this project will fill these voids in the field and replace outdated, deficient, capable of performing fault isolation and failure diagnosis on electro-optical components and assemblies of the Army's major weapons systems. Currently, electro-optic and difficult to maintain equipment such as the Land Combat Support System (LCSS). This new equipment will alleviate the existing EO test and diagnostic shortfalls weight, and cost, and require very highly skilled operators and maintainers. Serious deficiencies exist in EO testing capabilities in the field. There is no automatic EO (EO) testing requirements in the forward areas are met with a multitude of non-standard, semi-automatic or manual testers which vary greatly in capability, reliability, Project DL10 - Electro-Optic Test Equipment: This project provides for development of state-of-the-art, technologically superior general purpose test equipment

Page 1 of 14 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION S	STIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604746A Automatic Test Equipment	
	Development	

### FY 1994 Accomplishments

- Continued development of and acquisition support functions for Contact Test Set-EO Augmentation (CTS-EOA) (929)
  - Performed design analysis of EO test facility (EOTF) in shelter and van configuration (166)
    - Procured interactive electronic technical manual and calibration equipment for EOA (145)
- Commenced preparation of cost and operational effectiveness analysis (COEA) for EO test equipment (62)

### FY 1995 Planned Program:

- Evaluate/validate off-system EO test requirements and solutions (663)
- Convert LCSS EO TPSs for use on Base Shop Test Facility (BSTF) (3800)
- Close out CTS-EOA development and complete preparation of COEA (200)
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) (77)

### FY 1996 Planned Program:

See Project DL59.

### FY 1997 Planned Program:

See Project DL59.

software on targeted hardware; and development/evaluation of test programs sets (TPS) for use with standard ATE. Applications of state-of-the-art technologies in expert Project DLS9 - Diagnostic/Expert System Development: This project supports full-scale development of expert/diagnostic systems and general purpose test equipment systems and artificial intelligence, paperless maintenance and troubleshooting manuals, electro-optics displays for battlefield use, and soldier-friendly equipment will be existing deficiencies and voids in organic test and diagnostic capabilities. The project provides for development of diagnostic technologies and state-of-the-art general and evaluation/testing of nondevelopmental items (NDI) equipment for support of Army's weapons systems. These systems and equipment are required to overcome purpose test equipment to support the Army's weapons systems; improvement of general purpose test equipment to meet new testing and technological requirements; market surveys of commercially available general purpose test equipment to determine applicability to Army requirements; evaluations and validations of diagnostic developed to meet identified requirements.

Page 2 of 14 Pages

Exhibit R-2

770

RDT&E BUDGET ITEM JUSTIFICATION	TIFICATION SHEET (R-2 Exhibit) PATE February 1995	86
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PENUMBER AND TITLE  0604746A Automatic Test Equipment	
	Development	
FV 1994 Accomplishments		

- Developed, tested, and implemented additional diagnostic data capability and developed of test capability to meet new air quality standards (2576)
  - Commenced development of TPSs for the Kiowa Warrior Mast Mounted Sight and Control Display System (2000)
- Commenced development of depot and factory level TPSs and on-system diagnostic enhancements for the Longbow Apache (7000)
  - Converted Army Depot Automatic Diagnostic System TPSs for use on Integrated Family of Test Equipment (IFTE) (146)
    - Developed TPSs for Ground Based Sensor (801)
- Converted LCSS electronic TPSs for use on Base Shop Test Facility (BSTF) (955)

### FY 1995 Planned Program:

- Complete development of TPSs for Kiowa Warrior Mast Mounted Sight and Control Display System (4438)
- Complete development of selected depot and factory level TPSs and on-system diagnostic enhancements for the Longbow Apache (3288)
  - Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) (166)

### FY 1996 Plann Progam

- Test new Contact Test Set (CTS) hardware (1800)
- Test software for compatibility with new CTS (700)
- Commence development of software tools for new CTS (628)
- Perform bench testing of NDI equipment (380)
- Perform initial integration of Virtual Memory Extension Bus for Instrumentation (VXI) into IFTE (1409)
  - Test commercial equipment for satisfaction of IFTE capability requirements (520)

### FY 1997 Planned Program:

- Complete development of software tools for new CTS (340)
- Test commercial instrumentation in CTS chassis (618)
- Test new state-of-the-art commercial equipment for use in Army TMDE programs (390)
  - Test IFTE VXI integration for TPS compatibility (930)
- Evaluate down-sized test equipment for field use (600)

tem 89

#### February 1995 DATE 0604746A Automatic Test Equipment RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE **Development** 5 - Engineering And Manufacturing Development

Project D537 - Integrated Family of Test Equipment (IFTE): This project provides for development and upgrade of ATE that provides automated testing of electronicspre-planned product improvement program upgrades both the software and the hardware. The hardware upgrade will be for inclusion of the latest commercially available intensive weapons systems at all maintenance levels. IFTE will automatically test and verify the operation of line replaceable units and screen shop replaceable units. Its VXI technology as well as upgrades in the digital and radio frequency areas to support new weapons systems. Program has been restructured and continuing effort is funded under Project DL59 beginning in FY 1996.

## FY 1994 Accomplishments:

- Commenced computer system upgrade for the BSTF (1825)
- Commenced development of display replacement for the BSTF (660)
- Commenced software tool development (1122)
- Evaluated continuous acquisition and life cycle support and audio/video implementation (261)
- Acquired line replaceable units and TPSs for use in verification of test equipment operability (1278)

### FY 1995 Planned Program:

- Evaluate VXI and develop a method for VXI implementation into IFTE (751)
- Complete development and test computer system and display upgrades for the BSTF (1225)
  - Complete development and implement new software tools (355)
    - Perform base shop test facility TPS acceptance testing (500)
- Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR)(49)

### FY 1996 Planned Program:

See Project DL59.

### FY 1997 Planned Program:

See Project DL59.

Page 4 of 14 Pages

Exhibit R-2

Item 89

772

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION S	SHEET (R-	2 Exhibit)		DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604746A Auto Development	TITLE Automatic I nt	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	
B. Program Change Summary					
Previous President's Budget Appropriated Value	EY 1994 23453 23453	EY 1995 7201 15512	EY 1996 10894	FY 1997 5739	
Adjustments to Appropriated Value (Total PE) b. SBIR/STTR (+327) b. Reprogrammed Out of PE (-3200)	-3527				
Current President's Budget Submit	19926	15512	5437	2878	
	Page S	Page 5 of 14 Pages			Exhibit R-2

773

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATION	ON SHE	ET (R-2	Exhibit	()		DATE Fel	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NL 060 Dev	PE NUMBER AND TITLE 0604746A Auto Development	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	; Test Eq	ulpment		ة O	PROJECT DL 10
COST (in Thousands)	FY 1994 Actual	FY 1995 Eatimate	FY 1986 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
DL10 Electro-Optic (EO) fast Equipment	1302	4740	0	0	0	0	0	0	0	24702
C. Other Program Funding Summary										
OD A 2 A reservatisation	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
Integrated Family of Test Equipment (KA4100)		3897	6241						Cont'd	Cont'd
D. Schedule Profile										
_	FY 1994	4	- -	FY 1995	-	FY 1996	36 4	-	FY 1997	4
Complete Design Analysis of EOTF Revise CTS-EOA Schedules Complete COEA Complete CTS-EOA Developmental Testing IETM Delivery Preproduction Hardware Delivery	×			×× ××						
			Page 6 of 14 Pages	4 Pages				Exhibit R-2	5.	

Item 89

RDT	RDT&E PROGRAM ELEMENT/	RAM ELE	MENT/PAC	)JECT (	SOST B	REAKDO	PROJECT COST BREAKDOWN (R-3)		DATE	February 1995	966
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	g And Manu	facturing l	Development		PE NUMBER AND TIT 0604746A Au Development	PE NUMBER AND TITLE 0604746A Auton Development	natic Test	PE NUMBER AND TITLE  0604746A Automatic Test Equipment  Development			PROJECT DL10
A. Project Cost Breakdown Primary Hardware Development/Support Development Support Equipment Acquisition Systems Engineering Software Development/Engineering Technical Data Integrated Logistic Support Product Assurance Test Planning/Preparation Miscellaneous Total  B. Budget Acquisition History and Planning Information	eakdown  evelopment/Sup  rt Equipment Ac  g  int/Engineering  support  ration  ion History and	port quisition   Planning Inf	<u>ormation</u>	EX 1994 506 28 224 105 115 116 48 48 1302		EY 1995 200 588 3800 75 77 4740	FY 1996	EY 1997			
Performing Organizations Contractor or Contra Government Metho Performing or Fur Activity Vehic	zations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations To be selected C/CPIF	t Organizations C/CPIF	31Mar95	3800	3800			3800				3800
Pentastar Electronics, Inc Huntsville, AL	СЕР	FY92- FY94	10487	10487	10487						10487
Gov't In-House					3208	918	663				4789
SBIR/STIR				Раче	Page 7 of 14 Pages	S	77		Exhibit R-3	<b>?-3</b>	77
					277						Item 89

RDT	&E PROG	RAM ELE	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	DJECT (	COST BE	REAKDO	WN (R-3)		DATE F.	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Developm	g And Manu	facturing [	Development		PE NUMBER AND TITLE 0604746A Auto Development	SA Autom	אוזער Test Equipment Automatic Test Equipment ent	Equipmer			
Contractor or Government Performing Activity	Contract Method/Type o: Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
Other Contracts					4965	384	200				\$549
Government Furnished Property None.	shed Property P	Vone.									
					Total Prior to	1001	100 EV	EV 1002	FV 1007	Budget to	Total
Subtrital Product Development Subtrital Support and Management	rvelopment d Management				18660	1302	4740	7		A CANHAGAN	24702
Subtotal Test and Evaluation Total Project	valuation				18660	1302	4740				24702
				Pag	Page 8 of 14 Pages	S			Exhibit R-3	e.	
					776						Item 89

//o UNCLASSIFIED

RDT&E BUDGET ITEM JUST	M JUST	IFICATION SHEET (R-2 Exhibit)	ON SHE	ET (R-2	Exhibit			DATE <b>Fel</b>	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604746A Auto Development	PE NUMBER AND TITLE  0604746A Automatic Test Equipment  Development	: Test Eq	uipment		ų O	PROJECT <b>DL59</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Eetimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
DLS9 Diagnoettc/Expert System Development	13478	7892	5437	2878	2848	2818	3747	3741	Continuing	Continuing
C. Other Program Funding Summary									£	i so
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	S
OPA2 Appropriation Integrated Family of Test Equipment (K18400/K51600)	57835	58370	20208	20067	15714	16104	68368	68377	Cont'd	Cont'd
D. Schedule Profile										
Not Applicable										
			Page 9 of 14 Pages	4 Pages				Exhibit R-2	<b>?</b> -	
			777							Item 89

RDT	RDT&E PROGRAM ELEMENT	ZAM ELE	MENT/PRO	JECT C	OST BR	EAKDO	PROJECT COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	1 And Manuf	acturing D	evelopment		PE NUMBER AND TITLE 0604/746A Auto Development	AND TITLE  A Autom ment	atic Test	PENUMBER AND TITLE 0604/746A Automatic Test Equipment Development		# O	PROJECT DL59
A. Project Cost Breakdown System Engineering Software Development Development Support Equipment Acquisition Miscellaneous Total	<u>eakdown</u> :nt π Equipment Aα	quisition		EY 1994 2579 8890 1984 25 13478	FY 1995 7726 166 7892	199 <u>5</u> 7726 166 7892	EY 1996 3944 1328 165 5437	EY 1997 2373 340 165 2878			
B. Budget Acquisition History and Planning Information Performing Organizations	ii <u>on History and</u> zatio <b>s</b> s	Planning Inf	orm ation								
Contractor or Government Performing	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Dafe</u>	Performing Activity EAC	Project Office EAC	Total Pricr to	FY 1994	FY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations McDonnell SS/FFP Douglas Corp., Huntington Beach, CA	nt Organizations SS/FFP	Aug94/ Apr95	4100	4100		2000	2100				4100
Honeywell, Inc Albuquerque, NM	SS/FFP	Apr95	4760	4760	2337		2338			82	4760
McDonnell Douglas Corp., Mesa, AZ	SS/CPIF	Sep94	2400	2400		5400					2400
				Page	Pase 10 of 14 Pages	શ			Exhibit R-3	<del>}.</del> 3	
					778						Item 89

RDI	RDT&E PROGRAM ELEMENT/	RAM ELE	MENT/PRC	PROJECT C	SOST BF	REAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	g And Manu	facturing l	)evelopment		PE NUMBER AND TITLE 0604746A Auto Development	AND TITLE  SA Autom  ment	PE NUMBER AND TITLE 0604746A Automatic Test Equipment Development	Equipmer	¥	ž O	PROJECT DL.59
Contractor or Government Performing Activity McDonnell Douglas Corp., Mesa, AZ	Contract Method/Type or Funding Vehicle	Award or Obligation Date May94	Performing Activity EAC 3288	Project Office EAC 3288	Total Prior to FY 1994	FY 1994	FY 1995 3288	FY 1996	FY 1997	Budget to Complete	Total Program 3288
Gov't In-House					6525	1018		1625	1500	Cont'd	Cont'd
SBIR/STTR							166				166
Other Contracts					26327	2060		3812	1378	Cont'd	Cont'd
Government Furnished Property	ished Property										
Item Description	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Delivery Date		Total Prior to EY 1994	FY 1994	FY 1995	EY 1996	EY 1997	Budget to Complete	Total Program
Product Development Property	ant Property										······································
Support and Management Property	gement Property										
Test and Evaluation Property	n Property										
Subtotal Product Development Subtotal Support and Management	evelopment nd Management				32852	13478	7892	5437	2878	Cont'd	Cont'd
Subtotal lest and Evaluation Total Project	svaluation				32852	13478	7892	5437	2878	Cont'd	Cont'd
				Page	Page 11 of 14 Pages	sə.			Exhibit R-3	<b>-</b> -3	
					<i>971</i>						Item 89

facturing De			PE NUI	DE NIMBED AND TITLE					ii Caa	
	relopme	ant	0604 Dev	0604746A Au Development	itle Automatic It	Automatic Test Equipment ent	uipment		Δ.	PROJECT D537
COS (in mousenes) Ad	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D537 Integrated Family of Test Equipment	5146	2860	0	0	0	0	0	0	0	66312
C. Other Program Funding Summary									i	
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
OFAZ Appropriation Integrated Family of Test Equipment (K18400/K51600)	57835	58370	20208	20067	15714	16104	68368	68377	Cont'd	Cont'd
D. Schedule Profile										
Not Applicable										
			Page 12 of 14 Pages	4 Pages				Exhibit R-2	-2	
		ر ا	780 UNCLASSIFIED	SIFIED			i			Item 89

RD	RDT&E PROGRAM ELEME	RAM ELE		NT/PROJECT COST BREAKDOWN (R-3)	OST BE	EAKDO	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	ig And Manu	facturing (	Development	ų	PE NUMBER AND TITLE 0604746A Auto Development	AND TITLE  A Autom  ment	אוזונב Automatic Test Equipment ent	Equipmer		<u>.</u> 0	PROJECT <b>D537</b>
A. Project Cost Breakdown	reakdown			Ž	Ì	300	)				
Primary Hardware Develonment Runinsering Change	Development/Enc	rineering Char	300	1034	ᅿ	FY 1995	FY 19%	FY 1997			
Development Support Equipment Acquisition	ort Equipment Ac	quisition	uga Ta	1278		150 15					
Systems Engineering		ı		376		507					
Software Development	kent			1122		S 5					<u>-</u> -
Technical Data				975 470		8					
Miscellaneous Total				550 5146		99 2880					
B. Budget Acquisition History and Planning Informati	ition History and	Planning Inf	<u>formation</u>								
Performing Organizations	izations										
Contractor or Government Performing Activity	Contract Method/Type or Funding Yehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	EY 1994	EY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations	int Organizations										
SAIC San Diego, CA	C/CPAF	May/Jul/ Dec94	1122	1122		1122					1122
Northrop Grumman, Bethpage, NY	SS/FFP	Jun/Dec94 Apr95	2509	2509		200	2009				2509
Grumman Aerospace, Corp Bethpage, NY		Various	52792	52792	52792						52792
				Page	Page 13 of 14 Pages	es			Exhibit R-3	<b>(-3</b>	
											Item 89

RDT	RDT&E PROGRAM ELEMEN	RAM ELE	MENT/PR	DJECT (	IT/PROJECT COST BREAKDOWN (R-3)	<b>EAKDO</b>	WN (R-3		DATE	February 1995	962
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	g And Manul	facturing l	Development		PE NUMBER AND TITLE 0604746A Auto Development	SA Auton	natic Test	e number and Title 0604746A Automatic Test Equipment Development			
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	EY 1994	EY 1995	EY 1996	EY 1997	Budget to Complete	Total
Gov't In-House					5494	981	650				7125
Funded Requisitions						674					674
SBIR/STTR							49				49
Other Contracts						1869	172				2041
Government Furnished Property None.	shed Property N	lone.									
Subtotal Product Development Subtotal Support and Management	velopment 1 Management				58286	<u>EY 1994</u> 5146	EY 1995 2880	EY 1996	EY 1997	Budget to Complete	Total Program 66312
Subtotal Test and Evaluation Total Project	valuation				58286	5146	2880				66312
				Page	Page 14 of 14 Pages	es			Exhibit R-3	7-3	

782

Item 89

RDT&E BUDGET ITEM JI	EM JUST	<b>TIFICAT</b>	10N St	JUSTIFICATION SHEET (R-2 Exhibit)	2 Exhit	oit)		DATE Febr	February 1995	8
8UDGET ACTIVITY  5 - Engineering And Manufacturing Development	)evelopm	ent	PE N	PE NUMBER AND TITLE 0604760A Distri	ine Istributi	FENUMBER AND TITLE 0604760A Distributive Interactive Simulations	ive Sim	ulations -	£ 8	PROJECT DC81
				Engin	eering D	<b>Engineering Development</b>	nt			
									-	

912 Total Cost verified, validated, and accredited. Work done on this program will have benefit across the Army and DoD by providing standards for interoperability and software reuse A. Mission Description and Budget Item Justification. This program element (PE) provides for engineering development of reconfigurable simulators. Project DC81 various configurations of reconfigurable simulators. Prototypes will be evaluated by the Army's Battle Laboratories, and both software and hardware modules will be in this emerging domain. This project in this Program Element supports research efforts in the engineering and manufacturing development phases of the acquisition is focused on development of engineering techniques and equipment for reconfigurable simulators. Emphasis is placed on development of engineering prototypes for Complete FY 2001 Estimate FY 2000 Estimate FY 1909 Estimate FY 1996 Estimate FY 1997 Estimete FY 1996 Estimate FY 1905 Estimate FY 1994 Actual strategy and is therefore correctly placed in Budget Activity 5. DC81 Recomfigurable Simulator Engineering Development COST (In Thousands)

Project DC81 - Reconfigurable Simulators Engineering Development: This project initiates engineering development of both software and hardware for reconfigurable development of doctrine necessary to mesh new equipment items into training and battle situations. FY 95 efforts will include development of a first-generation rotary wing aircraft simulator, a generic armored vehicle simulator reconfigurable to any weapons and performance criteria, a fire support simulator for both artillery and air simulators for use in TRADOC Battle Labs. Simulators developed in this program are not system specific, but will represent generic equipment (tanks, aircraft, etc.). Reconfigurable simulators will be used to simulate existing and developmental equipment to explore new concepts and systems for technology insertion, and for the defense systems, and a combat service support module.

FY 1994 Accomplishments: Unfunded in FY 1994

### FY 1995 Planned Program

- Develop engineering techniques, drawings, and specification for design and fabrication of reconfigurable simulators (1160)
  - Build prototype reconfigurable simulators with various designs for evaluation in Battle Labs (4678)
- Conduct verification, validation, and accreditation of software and hardware reconfigurable simulator modules (440)
  - SBIR/STTR (134)

### FY 1996 Planned Program

Program continues as part of PE 0604715A - Project DC91, Distributive Interactive Simulation

### FY 1997 Planned Program

Program continues as part of PE 0604715A - Project DC91, Distributive Interactive Simulation

Page I of 3 Pages

Exhibit R-2

RDT&E BUDGET ITEM JU	M JUSTI	FICATION	STIFICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibit			DATE Feb	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopme	art	PE NU	PE NUMBER AND TITLE 0604760A Distr Engineer	inte Istributiv eering Do	PENUMBER AND TITLE 0604760A Distributive Interactive Simulations Engineering Development	tive Sim	ulations -		
B. Program Change Summary Previous President's Budget Appropriated Value Adjustments to Appropriated Value Current Budget Estimate Submission (BES)		EY 1994	걾	EY 1995 8041 6412 6412	EY 1996	E 1997	ZI.			
C. Other Program Funding Summers RDTE, A Budget Activity 5 PE 0604715A Project DC91, Distributive	EY 1994	EY 1995 3445	EY 1996 6139	FY 1997 3745	EY 1998 11328	EY 1992 6992	EY 2000 17063	EY 2001 14053	To Compl Cont'd	Total Cost d
Interactive Simulation RDTE, A Budget Activity 4, PE 0603760A, Distributive Interactive Simulations	0	8385	•	•	•	•	•	•	•	8385
D. Schedule Profile: The efforts funded in this project are therefore, no milestones are provided.		system speci	ific and repn	csent contin	wing advanc	ad developm	ent in the a	non-system specific and represent continuing advanced development in the area of Reconfigurable Simulators;	f <b>gurable</b> Si	mulators;
Request for Proposal release Contract Award Software/Hardware Integration	FY 1994	•	- ×	FY 1995 Z X	- → ×	FY 1996 2 3 X	<b>₩</b>	7	FY 1997 2 3	▼
			Pare 2 of 3 Pares	Pores				Exhibit R-2		1

Item 90

÷

RDT&E PROGRAM ELEMENT/PROJ	LEMENT/F	ROJECT	ECT COST BREAKDOWN (R-3)	EAKDO	WN (R			DATE	Tobar 1996	99
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ufacturing [	Development		PE NUMBER AND TITLE 0604760A Distr	AND TITLE  A Distril  ngineerin	R AND TITLE 30A Distributive Interactiv Engineering Development	PE NUMBER AND TITLE  0604760A Distributive Interactive Simulations Engineering Development	mulations		PROJECT DC81
A. Project Cost Breakdown Systems Engineering Primary Hardware Development Reliability, Maintainability, and Availability SBIR/STTR Total	vailability		EY 1994	귎	EY 1995 1160 4678 440 134 6412	EY 1996	EY 1997			
B. Budget Acquisition History and Planning Information:  Performing Organizations  Contractor or Contract  Government Method/Type Award or Performing or Funding Obligation Activity  Activity Vehicle Date EA	id Planning Info	Performing Activity EAC	Project Office EAC	Total Prior to	EY 1994	EY 1995	EY 19%	EY 1997	Budget to Complete	Total
TBD Best value Aug 95 contract Support and Management Organizations Miscellancous Various Various SBIR/STTR Government Furnished Property: Not Applicable	Aug 95 Aug 95 izations Various Not Applicable	6078 200 134	6078 200 134	0 00	0 00	6078 200 134	0 00	0 00	0 00	6078 200 134
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	:			0000	0000	6078 334 0 6412	0000	0000	0000	6078 334 0 6412
			Page	Pave 3 of 3 Paves				Exhibit R-3	9	

RDT&E BUDGET ITEM JUSTIFICATION	I JUSTIFICATION SHEET (R-2 Exhibit)	re February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604766A Tactical Exploitation of National	naí
	Capabilities (TENCAP) - Engineering Development	velopment
	(TIADA)	

Capabilities (TENCAP) - Engineering Development

COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1986 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Coet
Total Program Element (PE) Cost	47470	28065	24689	15302	19012	22016	77982	28533	Continuing	Continuing
D113 Joint Tectical Ground Station	21014	8851	0	0	0	0	0	0	0	20965
D909 Tactical Electronic Surveillance System - Eng Dev	26456	19214	24699	15302	19012	22016	29577	28533	Continuing	Continuing

intelligence and targeting needs and deficiencies for near-real-time receipt, analysis, and dissemination to the appropriate tactical echelon. Further details may be found in scope of the program is directed towards advanced techniques and capabilities to exploit National and selected theater capabilities that uniquely meet stated Army tactical Signals Intelligence (SIGINT) and multi-spectral developments are managed within the Army's Tactical Exploitation of National Capabilities (TENCAP) program. The commanders intelligence mission requirements for contingency force deployment and deep battle surveillance and targeting - as stated in Field Manual 100-5. Specific the Tactical Intelligence and Related Activities (TIARA), Congressional Justification Book, Volume II and the TENCAP Master Plan. The projects in this PE support A. Mission Description and Budget Item Justification. This Program Element (PE) supports the engineering development directed at meeting the tactical research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Project D113 Joint Tactical Ground Station (JTAGS): This project initiates development of two Engineering and Manufacturing Development (EMD) JTAGS units. based sensors of major tactical events such as missile launches. JTAGS supports active defense, attack operations, and passive defense. By being located in-theater, the TAGS is designed for in-theater receipt, processing and dissemination of warning and alerting data from Defense Support Program (DSP) sensors and follow-on space The project is a follow-on to the Tactical Surveillance Demonstration (TSD) and a sectical Surveillance Demonstration Enhancement (TSDE) programs (Project Demonstration Enhancement (TSDE) system improves the warning and alerting response time and climinates several single-point-failure susceptible communications relay nodes. The warning and cueing information gathered will be disseminated via Tactical Information Broadcast System (TIBS), Tactical Related Application (TRAP) and other existing in-theater communications nets

### FY 1994 Accomplishments:

- Completed developmental and phase I operational testing of transportable TSDE unit. (470)
  - Prepared for and conducted Milestone (MS) II decision review. (720)
    - Developed EMD JTAGS ruggedization specifications. (1331)
      - Awarded EMD contract for two JTAGS EMD units. (18493)

Page 1 of 12 Pages

Exhibit R-2

Item 91

a	
	pment

### FY 1995 Planned Program:

- Develop and deliver two JTAGS EMD units. (6897)
- Initiate developmental and operational testing of EMD units. (1081)
- Initiate preparation for MS III decision review. (687)
- Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (186)

### FY 1996 Planned Program:

Project completed in FY 96. Effort moves to Procurement (BZ8410).

Support Terminal (FAST), Electronic Processing Dissemination System (EPDS) and Tactical Exploitation System (TES). The Army's emerging TES will incorporate the Graphic Situation Display (GSD) is a jointly funded program to develop a means to computer generate, transmit, and display graphical representations of the bartle space Project D909 Tactical Exploitation of National Systems (TENCAP) Engineering Development: This project supports the engineering development/enhancement of application to multiple TENCAP systems (including MIES and ETRAC that are funded under the Defense Airborne Reconnaissance Program (DARP) (PE 0305154D)). the Electronic Tactical User Terminal (ETUT), Mobile Integrated Tactical Terminal (MITT) (replaces the Tactical High Mobility Terminal (THMT)), Forward Area capabilities (EPDS, MIES, and ETRAC) into an integrated common baseline, downsized, modular and scaleable to meet a wide range of contingency requirements. standards and protocols dictated by the Common Imagery Ground Surface System (CIGSS) program. TES brings all of the existing and emerging Army TENCAP TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential thereby saving communicating bandwidth, manpower and time. The beta software portion of the GSD effort was funded with FY 93 Military Exploitation of Reconnaissance and Intelligence Technology (MERIT) funds.

### FY 1994 Planned Program:

- controlled Electronic Sub-System (SUCCESS) Radios to DAMA) to fully exploit National capabilities to meet emerging worldwide contingency scenarios. (14201) Continued software upgrades and enhancements for the refinement of the TENCAP Common Baseline (including work done to modify Synthesized UHF Computer
  - Initiated the engineering development of five additional MITTs to replace the existing THMTs. (6200)
- Continued to retrofit of ETUTs with MITT hardware and software (based on an open architecture baseline). (5149)
- Continued support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace), Army Research Laboratory (ARL) support, U.S. Army Space Program Office (ASPO) support and Contractor System Engineering and Technology Assistance (SETA) support. (906)

Page 2 of 12 Pages

Exhibit R-2

#### February 1995 Capabilities (TENCAP) - Engineering Development 0604766A Tactical Exploitation of National RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE (TIARA) 5 - Engineering And Manufacturing Development **BUDGET ACTIVITY**

### FY 1995 Planned Program:

- Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit National capabilities to meet emerging worlawide contingency scenarios which includes major upgrade to communications component which is common to all TENCAP systems SUCCESS Radio. (9749)
  - Continue engineering development of five additional MITTs to replace existing THMT. (1500)
    - Continue the retrofit of ETUTs with enhanced MITT hardware and software. (1330)
- Initiate effort to upgrade ETUT to include EPDS capabilities, which will allow for the deficiding of the EPDS systems in FY 7. (4270)
- Continue support to TENCAP program management and administrative activities (e.g., FFRDC (Acrospace), ARL support, ASPO support and Contractor SETA
- Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR). (403)

### 1996 Planned Program:

- communications capabilities to meet changing architectures and implementation of software appliqué to provide the operational commander with enhanced battlefield Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit National capabilities such as integration of intelligence products. (11114)
- Complete the retrofit of ETUTs with enhanced MITT hardware and software. (2000)
  - Complete effort to upgrade ETUT to include EPDS expabilities. (5800)
    - Complete building/fielding of five additional MITTs. (1000)
- Initiate engineering development of the TES. (1614)
- Continue support to TENCAP Program management and administrative activities (e.g., FFRDC (Aerospace), ARL support, ASPO support, SETA support, and U.S. Army Topographic Engineering Center (TEC). (3171)

### FY 1997 Planned Program:

- Continue software upgrades and enhancements for the refinement of the TENCAP Common Baseline to fully exploit National capabilities such as integration of communications capabilities to meet changing architectures and implementation of software applique to provide the operational commander with enhanced battlefield intelligence products. (7008)
  - Continue engineering development of the TES. (4800)
- Continue support to TENCAP program management and administrative activities (e.g., FFRDC (Aerospace) and Contractor SETA support. (3494)

Page 3 of 12 Pages

Exhibit R-2

Item 91

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R	-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604766A Tacti Capabilities (TE	Tactical Ex	PENUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development	rtional Development
B. Program Change Summary				
FY 1994		FY 1996	FY 1997	
Previous President's Budget \$2279	28475	23664	14291	
Appropriated Value \$2279	28065	0	0	
ropriated Value	0	0	0	

Change Summary Explanation (by Project):

a. SBIR/STTR decrement (-810)b. Reprogrammed out of PE (-3999)Current Budget Submit/President's Budget

15302

24699

28065

47470

Project D909, Tactice Plectronics Surveillance System - Engineering Development

been moved to the Defense Airborne Reconnaissance Office (DARO), the Department of the Army continues to support these development efforts on their behalf. Funding Therefore the increase to this PE in FY 96 and FY 97 is the result of consolidating the DARO support efforts that were previously funded under project D560 with project. and ETRAC and support to JSIPS program that were funded in Project D560 and D662 in FY94 were moved to OSD PE 0305154D, DARP. Even though the funds have CAPABILITIES (TENCAP) PROGRAM. ALL EFFORTS FUNDED UNDER PE 0604740A/PROJECT D662 WERE CONSOLIDATED WITH PE 0604766A/ 0603766A/PROJECT D907 IN FY 96 AND BEYOND. These PEs/Projects were consolidated because in FY 95 all funds directly related to the development of MIES Funding: IN FY 96, THE ARMY CONSOLIDATED THE REMAINING PES SUPPORTING THE ARMY TACTICAL EXPLOITATION OF NATIONAL PROJECT D909 IN FY 96 AND BEYOND. AS A PART OF THIS SAME ACTION, PE 0603730A/PROJECT D560 WAS CONSOLIDATED WITH PE to support these DARO efforts (ASPO salaries and expenses, TEC, FFRDC, Contractor SETA, and certain studies) remained in this project and are still required.

Schedule: None

Technical: None

Page 4 of 12 Pages

Exhibit R-2

RDT&E BUDGET ITEM J	EM JUS	TIFICAT	ION SH	USTIFICATION SHEET (R-2 Exhibit)	-2 Exhib	Œ		DATE Fel	February 1995	966
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Jevelopm	ent	PENI 060 Cap	PE NUMBER AND TITLE  0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	πιε actical E (TENCA	xploitati P) - Engil	on of Nat neering [	tional Developn		PROJECT D113
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
D113 Joint Tactical Ground Station	21014	8851	0	0	0	0	0	0	0	29865
C. Other Program Funding Summary				<u> </u>			ł	1	ក	Total
Other Procurement Army, OPA-2 BZ 8410 Joint Tactical Ground Station (JTAGS)	FY 1994	FY 1995	FY 1996 30914	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
D. Schedule Profile					•	•	•	•	•	
_	FY 1994	4	- E	FY 1995	4	FY 1996	96 3	-	FY 1997	4
Milestone II IPR EMD Contract Award Technical Review Complete Del 1st EMD Prototype Developmental Test Begin Del 2nd EMD Prototype Operational Tests Begin Milestone III IPR		^^	· ×		· ×	×		•	1	
*Completed										
			Pare 5 of 12 Pares	2 Pages				Exhibit R-2	7	
			100							Item 91

Item 91

RDT&EP	RDT&E PROGRAM ELEMENT/PR	ELEMEN	T/PROJECT COST	COST	BREAK	BREAKDOWN (R-3)	R-3)		DATE	ebruary 1995	395
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	g And Manuf	facturing L	Development		PE NUMBER AND TITLE 0604766A Tact Capabilities (TE (TIARA)	AND TITLE  SA Tactic  Ities (TEN	PENUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Developnient (TIARA)	ation of N igineering	ational I Develop		PROJEJT D113
A. Project Cost Breakdown	reakdown										
Prime Contractor				FY 1994	F	FY 1995 2894	FY 1996 0	FY 1997	-1-		
Contract Engr Support	ort			3313	- •	2070	0	0	_		
Program Management Support	ent Support			1549		1708	0	0	_		
Government Engineering Support	sering Support			<b>8</b>	•	2055	0	0			
Covernment rumished Equipment Total	nea Equipment			21014		124 8851	00	00			
B. Budget Acquisition History and Planning Information	tion History and	Planning Inf	ormation								
Performing Organizations	izations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity   Venicle   Product Development Organizations	Venicie ent Organization	<u>Date</u>	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Aerojet (Prime)	C/CPFF	8 Jul 94	16441	16968	0	13934	2894	0	0	0	16828
Acrojet (TSDE)  Support and Management Organizations	gement Organiz	ations				261	0	0	0	0	261
Proj Mgt/Matrix	N/A	N/A	N/A	N/A	0	1743	2475	0	0	0	4218
SETA	C/CPIF	2 Oct 90	N/A	N/A	0	2064	1369	0	0	0	3433
Contract Eng Spt	•		N/A	K/N	0	1249	701	0	0	0	1950
Test and Evaluation Organizations	n Organizations										
WSMR					0	405	888	0	0	0	1293
OTEA/Other					0	385	400	0	0	0	785
				Page	Page 6 of 12 Pages	S			Exhibit R-3	<b>k-3</b>	
					161						Item 91

RDT&E PR	OGRAM EL	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT COST BF	<b>EAKDO</b>	WN (R-3	_	DATE	February 1995	301
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develo	fanufacturing	Development	PE NUMBER AND TITLE 0604766A Tact Capabilities (TE (TIARA)	AND TITLE SA Tactic ities (TEN	PE NUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	ation of N	_ 0	ment	
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle	erty Type Award or ng Obligation Date	Delivery Date	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Property Radios, Comms, Various (Generator, etc.) Support and Management Property None	ty 2Q94 - 2Q95 operty	4Q94-3Q95	•	973	124	0	•	0	1097
Test and Evaluation Property None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Subtotal Government Furnished Property Total	r nent 1 Property		Total Prior to EY 1994	EV.1994 14195 5056 770 973	EV 1995 2894 4545 1288 124 8851	FY 1996	EV 1997	Budget to Complete	Total Program 17089 9601 2078 1097 29865
			Page 7 of 12 Pages				Exhibit R-3	£-	

Item 91

RDT&E BUDGET ITEM J		TIFICAT	USTIFICATION SHEET (R-2 Exhibit)	EET (R	2 Exhib	it)		DATE <b>Fel</b>	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060 Cap	PE NUMBER AND TITLE 0604766A Tact Capabilities (TE (TIARA)	PE NUMBER AND TITLE  0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	xploitati P) - Engli	on of Nat neering [	tional Developn		Р <b>R</b> ОЈЕСТ <b>D909</b>
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1986 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Coat
D909 Tactical Electronic Surveillance System - Eng Dev	26456	19214	24699	15302	19012	22016	728577	28533	Continuing	Continuing
C. Other Program Funding Summary										
RDTE, A Budget Activity 4	FY 1994	EY 1995	FY 1996	FY 1997	FY 1998	FY 1999	<b>EY 2000</b>	FY 2001	To Compl	Total Cost
PE 0603730A Project D560 Tact Surv Sys - Adv Dev	15140	11717	0	0	0	0	0	J	N/A	N/A
PE 0603766A Project D907 TENCAP-Adv Dev	15069	14815	28693	26913	23935	28057	29377	34319	Cont	Cont
RDTE, A Budget Activity 5 PE 0604740A Project D662 Tact Surv Sys - Eng Dev	37534	2093	0	0	0	0	0	0	Z/A	N/A
RDTE, D Budget Activity 7 PE 0305154D Project P531 DARP	0	40017	33833	37216	12390	6328	6328	6328	Cont	Cont
Other Procurement Army, OPA-2 BZ7315 TENCAP BA0329 DARP	7729 1927	4636	4617	1807	1784	1853 0	4971	14916 0	Cont	Cont
Procurement, Defense Wide PE 0305154D	0	0	88700	123400	77900	69100	71400	73300	Cont	Cont
D. Schedule Profile			Page R of 13 Pages	Page				Evhith:	c	
			200							100

вирсет Астіvity 5 - Engineering And Manufacturing Development				ON OL		K-2 E	STIFICATION SHEET (R-2 Exhibit)	<b>∵</b>		<u> </u>	Ľ.	February 1995	iry 19	96
	g Develop	ment		PE N.	PE NUMBER AND TITLE 0604766A Tactical Exploitation of National	D TITLE <b>Tacti</b>	cal Ex	ploita	tion o	f Natio	onal			PROJECT D909
				BE E	Capabilities (TENCAP) - Engineering Development (TIARA)	88 (TEI	NCAP)	- Eng	jineer	ing D(	evelop	ment		
•	,	٠,	,	· .	FY 1995	,	-	Ε,	1996			FY 1997	766	•
Completed and Fielded Initial six MITTs	• ×	า	r	7		+	<b>-</b>	7	<b>n</b>	<b>†</b>	-	7	2	4
Awarded Contract of five Additional			×											
Completed Eng Dev and Field FASTs		×												
Initiate upgrade to ETUT with EPDS Functionality					×									
Completed Dev and Fielded five Additional MITTs									×					
Completed Retrofit and Refield ETUTs									×					
Complete and Field DAMA Appliqué into SUCCESS Radios											×			
Initiate Engineering Development of TES Install GSD in FAST Systems									×	×				
										<b>&lt;</b>				
			P	Page 9 of 12 Pages	2 Pages					ш	Exhibit R-2	<b>2-2</b>		

DIDSE BOACDAM EL EMENITABO LEAT CAST		DATE	
NIDGE TRUGRAM ELEMENI/FRUJECI CUSI BREANDUWN (K-3)		February 1995	1995
BUDGET ACTIVITY	PE NUMBER AND TITLE		PROJECT
5 - Engineering And Manufacturing Development	0604766A Tactical Exploitation of National	ional	<b>6060</b>
	Capabilities (TENCAP) - Engineering Development	<b>Jevelopment</b>	
	(TIARA)		
A. Project Cost Breakdown D909			

FY 1994 FY 1995 FY 1996		2600	٥	9749	16849		426 995 1323	1370	2365	19214
System Development:	MITT	ETUT	TES	Common Baseline (*1)	Subtotal System Development	Program Management:	FFRDC (*2)	System Engineering (Contractor) (*2)	Subtotal Program Support (*2)	Total

<sup>(\*1)</sup> TENCAP Common Baseline addresses common subsystems, planned improvements, key activities and ongoing/planned initiatives determined to have potential application to multiple TENCAP systems (including MIES and ETRAC that are funded under the DARP (PE 0305154D).

Page 10 of 12 Pages

Exhibit R-3

<sup>(\*2)</sup> In FY 96 and beyond, the support efforts previously funded under PE 0604740A, Project D662 (which support efforts developed under PE 0305154 (DARP)) are consolidated into this project.

RUT	RUT&E PROGRAM ELEMEN	RAM ELE	MENT/PR	OJECT (	SOST BF	REAKDO	T/PROJECT COST BREAKDOWN (R-3)		DATE F.	February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	g And Manu	facturing C	)evelopmen		PE NUMBER AND TITLE 0604766A Tact Capabilities (TE	AND TITLE SA Tactic ities (TEN	PENUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development	ation of N	lational 3 Develop		PROJECT <b>D909</b>
					(TIARA)						
Performing Organizations	iron custory and izations										
Contractor or Government Performing	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations	ent Organization	2									
	MIPR MIPR MIPR	2024 2024 2034	<b>4 4 7 2 2 3 2 3 3 3 3 3 3 3 3 3 3</b>	<b>4 4 4</b> 2 2 2	<b>4 4 2 2 2 2 2 2 2 2 2 3 2 3 3 3 3 3 3 3 3 3 3</b>	6200 5149 12931	1500 5600 9179	1000 7800 111039	0 0 6933		
	TBD	TBD	N/A	Y X	0	0	•	1614	4800		
Support and Management Organizations	gement Organiz	zations									
SSD/FDEA	MIPR	1Q EA FY	N/A	XX	N/N	426	866	1323	1326		
Classified (Sys Eng Cont)	MIPR	1Q EA FY	N/A	N/A	V/N	480	1370	1848	2168		
Test and Evaluation Organizations	a Organizations	_									
TEXCOM (Cmn Bsln)	MIPR	1094	N/A	N/A	N/A	6	02	75	75		
· · · · · · · · · · · · · · · · · · ·											
				Page	Page 11 of 12 Pages	53			Exhibit R-3	<b>k-3</b>	
											In 01

7% UNCLASSIFIED

RTD&E PRO	GRAM ELI	EMENT/F	RTD&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	EAKDO	WN (R-3			DATE Fe	February 1995	995
вирсет астилту 5 - Engineering And Manufacturing Development	g And Manul	facturing	Development	PE NUMBER AND TITLE 0604766A Tact Capabilities (TE (TIARA)	AND TITLE A TACTIC. ties (TEN	PENUMBER AND TITLE 0604766A Tactical Exploitation of National Capabilities (TENCAP) - Engineering Development (TIARA)	ation of N	ational   Develop		PROJECT
Government Furnished Property Contract Method/Type Item or Funding Description Vehicle	ished Property Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Delivery <u>Date</u>	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
ROTERMs/ CHARIOTs (Cmn Bsln)	MIPR	3094	3Q95	<b>V</b> N	1200	200	0	0		
Support and Management Property	egement Propert	<u>*</u>								
Test and Evaluation Property	on Property									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Subtotal Government Furnished Property Total Program	evelopment nd Management Evaluation :nt Furnished Pro	<b>per</b> ty		Prior to Prior to NA NA NA NA NA NA NA NA NA NA NA NA NA	EX 1994 24280 906 70 1200 26456	EX 1995 16279 2365 70 500 19214	FY 1996 21453 3171 75 0 24699	EY 1997 11733 3494 75 0 15302	Budget to Complete	Total Program
			Page	Page 12 of 12 Pages	ş			Exhibit R-3	£.	
	***************************************			*******						

797

	RDT&E BUDGET ITEM J		TIFICAT	HS NOI	EET (R	USTIFICATION SHEET (R-2 Exhibit)	it)		DATE Fe!	February 1995	95
8UDG 5 - E	BUDGET ACTIVITY 5 - Engineering And Manufacturing Develo	evelopment	ent	PE NU 060	PE NUMBER AND TITLE 0604768A Brilli	E NUMBER AND TITLE 0604768A Brilliant Anti-Armor Submunition	nti-Armo	r Submu	nition		
	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
	Total Program Element (PE) Cost	121894	117526	193303	185974	184102	139786	152388	108777	7405	1726358
D641	D641 BAT	121884	92287	82058	71525	24947	0	0	0	0	924884
D887	D687 BAT P3I	0	15275	37136	34742	63336	63041	77439	36314	0	327283
D688	D688 ATACMS BLK II	0	9964	56840	77916	77704	41663	0	0	0	264077
9890	D686 ATACMS BLK IIA	0	0	0	0	11847	31111	74949	72463	7405	197775
D2NT	D2NT BAT OPERATIONAL TEST	0	0	862	1791	9929	3961	0	0	0	12339

forces and long range weapons at ranges in excess of 100 kilometers before they can influence the maneuver battle. In the past, the only options have been to engage these carry 13 BAT submunitions. The ATACMS BLK IIA missile is an extended range version of the ATACMS BLK II missile and will carry 6 BAT P31 submunitions out to includes the BAT submunition, a pre-planned product improvement (P31) BAT submunition, the Army Tactical Missile System Block II (ATACMS BLK II) missile, and BAT P31 program will improve the sensor and warhead subassemblies to increase lethality and to enable the BAT submunition to attack cold, stationary, armored targets are carried deep into enemy territory by the two Army TACMS variants, then dispensed over a large target array to selectively attack and destroy individual targets. The A. Mission Description and Budget Item Justification: The BAT system supports the Army's deep fires doctrine that calls for the destruction and disruption of threat human interaction. It is an unpowered, aerodynamically stable vehicle, approximately 36 inches long, 5.5 inches in diameter and weighs 44 pounds. BAT submunitions and other targets of high value. The ATACMS BLK II missile is a version of the currently fielded and combat-proven Army TACMS Block I missile and is designed to the ATACMS BLK IIA missile. BAT is a dual-sensor (acoustic and infrared) submunition that autonomously seeks out and destroys moving armored vehicles without reduces this risk through its autonomous acquisition and terminal guidance capabilities to attack well defended armored forces behind enemy lines. The BAT system targets with attack helicopters or fixed wing aircraft. While effective, these options place critical resources and their air crews at risk. The BAT system significantly ranges in excess of 200 kilometers. The projects in this Program Element support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

carried deep into enemy territory by variants of the Army Tactical Missile System (ATACMS), then dispensed over numerous high-payoff targets to selectively attack and destroy individual targets. By utilizing acoustic technology, BAT has the advantage of a large footprint which allows it to compensate for target location errors. Being a pounds. The BAT is an acoustic and infrared terminally guided submunition that searches for, tracks, and destroys armored, mobile targets. BAT submunitions are Project D641-BAT: The BAT submunition is an unpowered, aerodynamically stable vehicle approximately 36 inches long, 5.5 inches in diameter, and weighs 44 certified round, the BAT submunition has a low sustainment cost.

Page I of 14 Pages

Exhibit R-2

Item 92

798

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604768A Brilliant Anti-Armor Submunition	
FY 1:94 Accomplishments:		

- Conducted EMD Program (111994)
- Conducted Carrier Integration Activities and other studies (4000)
- Conducted Test Range and Target Operation, Maintenance and Improvements (5900)

## FY 1995 Planned Program:

- Conduct EMD Program (55695)
- Conduct Carrier Integration Activities and other studies (25884)
- Conduct Test Range and Target Operation, Maintenance and Improvements (8800)
  - SBIR/STTR decrement(1908)

## FY 1996 Planned Program:

- Conduct EMD Program (71139)
- Conduct Carrier Integration Activities and other studies (19089)
- Conduct Test Range and Target Operation, Maintenance and Improvements (8800)

## FY 1997 Planned Program:

- Conduct EMD Program (58988)
- Conduct Carrier Integration Activities and other studies (5458)
- Conduct Test Range and Target Operation, Maintenance and Improvements (7079)

Project D687-BAT P31: The BAT P31 submunition maintains the BAT length, diameter, and weight configurations. The BAT P31 is a multi-sensored, terminally guided variants of the Army Tactical Missile System (ATACMS), then dispensed over numerous high-payoff targets to selectively attack and destroy individual targets. BAT P3I submunition that searches for, tracks, and destroys specific targets including mobile armored combat vehicles, cold stationary armor combat vehicles, Surface-to-Surface is intended to increase submunition lethality and expand the target arrays to be attacked. Being a certified round, the BAT P31 submunition has a low sustainment cost. Missile (SSM) Transporter Erector Launchers (TELs), and Heavy Multiple Rocket Launchers (MRL). BAT P31 submunitions are carried deep into enemy territory by This program will incorporate new seeker, warhead, and microprocessor technologies into the current BAT configuration while maintaining the current BAT form, fit design and maximum commonality of BAT components. This program includes studies/demonstrations pertaining to technology advancements, alternate carriers, dentification friend or foe, and acoustic/infrared/millimeter wave characterization of expanded target sets.

FY 1994 Accomplishments: No Planned Program

Page 2 of 14 Pages

Exhibit R-2

<u>ب</u>

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilliant Anti-Armor Submunition	uo
FY 1995 Planned Program:  Conduct P31 DEM/VAL Phase II program (13232)  Conduct P31 warhead development (1697)  Test Range Activities (25)  SBIR/STTR decrement(321)		
<ul> <li>FY 1996 Planned Program:</li> <li>Conduct P3I DEM/VAL Phase II program (33174)</li> <li>Conduct P3I warhead development (2162)</li> <li>Test Range Activities (1800)</li> </ul>		
FY 1997 Planned Program:  Conduct P3I DEM/VAL Phase II program (30069)  Conduct P3I warhead development (1773)  Test Range Activities (2900)		
Project D688-Army Tactical Missile System Block II: The Army Tactical Missile System Block II (ATACMS BLK II) will be a ground launched, solid propellant, inertially guided (GPS aided) missile system with 13 BATs or P31 BATs as its payload. The mission of the ATACMS BLK II is to delay, disrupt, neutralize, or destroy armored combat vehicles and other postulated high-payoff targets. Once the BAT P31 submunition is incorporated into the ATACMS BLK II, these targets will include cold stationary armored combat vehicles, mobile armored combat vehicles, heavy multiple rocket launchers and missile transporter/launchers. ATACMS BLK II will be launched to an enemy territory where these submunitions will autonomously track and destroy numerous high-payoff targets. Global Positioning System (GPS) technology will increase accuracy in flight, reducing target location errors. ATACMS BLK II will be launched from the M270 launcher.	or P3I BATs as its payload. The mission of the ATACMS BLK II) will be a ground launched, solid propellant, or P3I BATs as its payload. The mission of the ATACMS BLK II its to delay, disrupt, neutralize, or destroy argets. Once the BAT P3I submunition is incorporated into the ATACMS BLK II, these targets will include ombat vehicles, heavy multiple rocket launchers and missile transporter/launchers. ATACMS BLK II ep in enemy territory where these submunitions will autonomously track and destroy numerous high-payoff necesse accuracy in flight, reducing target location errors. ATACMS BLK II will be launched	nched, solid propellant, upt, neutralize, or destroy these targets will include ATACMS BLK II by numerous high-payoff te launched
FY 1994 Accomplishments: No Planned Program		
<ul> <li>FY 1995 Planned Program:</li> <li>DA IPR (Mar 95) (1000)</li> <li>Complete Preliminary Design Support (DAAH01-94-C-S036) (3050)</li> <li>Restraint and Static Testing (PDS) (205)</li> <li>CD Contract Award (May 95) (5500)</li> <li>SBIR/STTR decrement (209)</li> </ul>		
Page	Pare 3 of 14 Pares	Exhibit R-2

Item 92

# February 1995 0604768A Brilliant Anti-Armor Submunition RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 5 - Engineering And Manufacturing Development

## FY 1996 Planned Program:

- Conduct Continued Development (55440)
- Cr..duct Static and Sled Tests (800)
- Conduct Range Planning and Activities to Accommodate BLCCK II Flight Tests (600)

## FY 1997 Planned Program:

- Conduct CD Program (60737)
- Conduct PPT Flight Test Program (16369)
- Conduct activities to support JPSD and future improvement programs (810)

ATACMS BLK II missile. It is a ground launched, solid propellant, inertially guided missile system with 6 Pre-Planned Product Improvement (P31) BATs as its payload. Surface Missile (SSM) Transporter and Erector Launcher (TELS), and other high value targets at ranges in excess of 200 kilometers. Global Positioning System (GPS) The mission of the ATACMS BLK IIA is to delay, disrupt, neutralize, or destroy moving armored combat vehicles, cold stationary targets, dug-in targets, Surface-to-Project D686-Army Tactical Missile System Block IIA: The Army Tactical Missile System Block IIA (ATACMS BLK IIA) is the extended range version of the technology will increase accuracy in flight, reducing target location errors. The ATACMS Block IIA missile will be launched from the M270 launcher.

FY 1994 Accomplishments: No Planned Program

FY 1995 Planned Program: No Planned Program

FY 1996 Planned Program: No Planned Program

FY 1997 Planned Program: No Planned Program

encountered in actual combat with typical user troops trained to employ the system. OPTEC provides the Army leadership with an independent test and evaluation of both Operational Test and Evaluation Command (OPTEC). The BAT submunition is an Acquisition Category (ACAT) I system with a dedicated Initial Operational Test and Evaluation in FY 1998 in support of a Low Rate Initial Production (LRIP) decision. Operational testing is conducted under conditions, as similar as possible, to those Project D2NT-OPTEC: Project D2NT finances the direct costs of planning and conducting operational testing and evaluation of the BAT submunition by the the effectiveness and suitability of the system. Project D2NT is not a new start. It is reprogrammed from PE 0605712, Support of Operational Testing, Project D001, OPTEC Initial Operational and Evaluation (IOTE)

FY 1994 Accomplishments: No Planned Program

Exhibit R-2

Page 4 of 14 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-	2 Exhibit)	DATE	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilli	TITLE Brilliant Ant	TITLE Brilliant Anti-Armor Submunition	
FY 1995 Planned Program: No Planned Program				
FY 1996 Planned Program:  IOTE planning and preparation (299)				
FY 1997 Planned Program:  IOTE planning and preparation (1791)				
B. Program Change Summary	FV 1995	FV 1996	FV 1997	
Appropriated Value (Total PE) 2167 Adjustments to Appropriated Value (Total PE) 2167	109011	136501	106794	
b. Reprogrammed to PE (3999) Current President's Budget Submit	117526	193303	185974	
Change Summary Explanation  In order to properly fund and support the integrated ATACMS/BAT program, the FY 96 RDT&E funding for project D685 (BAT Carrier) was transferred from PE  23802 (Other Missile PIP), and placed in PE 6⁴768 (BAT) in project D688 (ATACMS BLK II). The FY 95 funds were transferred by congressional action. The Army has transferred the FY 96 and later years funding streams through the POM process.	n, the FY 96 RDT ATACMS BLK I POM process.	&E funding for    ). The FY 95 fu	project D685 (BAT Carrier) v nds were transferred by cong	was transferred from PE ressional action. The

Page 5 of 14 Pages 802

Exhibit R-2

Item 92

RDT&E BUDGET ITEM JU	M JUSTI	FICATION	NO SHE	ET (R-2	STIFICATION SHEET (R-2 Exhibit)			DATE	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NU 060	PE NUMBER AND TITLE 0604768A Brilli	ritle Brilliant A	STITLE Brilliant Anti-Armor Submunition	r Submu	nition	6	PROJECT D641
COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to	Total Cost
D641 BAT	121894	82287	82066	71525	24947	0	0	0	0	924884
C. Other Program Funding Summary	FY 1994	EY 1995	EY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Total
Missile Procurement, Army CA 6100 BAT					127425	112232	187512	204623	1160647	1792439
킐	FY 1994 2 3	4	- E	FY 1995 2 3	4	FY 1996 2 3	δω 4	-	FY 1997 2 3	4
EMD Kestneture  Ist Prototype Unit Delivered Complete DVT Begin Subsystem Qual Complete WT/Sled Tests Complete Subsystem Qual Initiate Contractor Drop Test (CDT) Complete CDT		*	* *		× ×	×	×		×	
• Indicates activity is complete										

803

Page 6 of 14 Pages

Exhibit R-2

RDT8	LE PROG	RDT&E PROGRAM ELEMEN		) JECT C	OST BF	EAKDO	T/PROJECT COST BREAKDOWN (R-3)	_	DATE Fe	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	And Manu	facturing D	evelopment		PE NUMBER AND TITLE 0604768A Brilli	AND TITLE I <b>A Brilliar</b>	nt Anti-An	TITLE Brilliant Anti-Armor Submunition	unition	<u>.</u> 0	PROJECT <b>D641</b>
A. Project Cost Breakdown	akdowa			FV 1994	FΥ	FY 1995	FY 1996	FY 1997			
Contractor Engr Support	ort Frasi			95800		8100	74028	46590			
Program Management Spt	t Spt			10552		8297	7858	9706			
Frogram Management Fersoniki   Total	r rersonner			121894	6	92287	99028	71525			-
B. Budget Acquisition History and Planning Information	on History and	t Planning Inf	ormation								
Performing Organizations	ations										
Contractor or	Contract		Description	Design	Test						
Performing	Method/1ype or Funding	Award of Obligation	Activity	Office	Prior to					Budger to	Total
Activity	Vehicle	Dete	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations Northma	ot Organization	20 Z E Z	\$61000	\$61000	378107	95800	68517	74028	46590	20622	683664
Grumman Coro	CFFF		1								
In-House Support	8	120			38366	9542	7373	7742	8129	1329	72481
Support and Management Organizations   SETA & Program SS/CPFF NOV	ement Organiz SS/CPFF	zations NOV			45520	4699	4570	4800	3935	825	64349
Mgmt Spt	! ! !	,								,	
Misc. OGA	2	0CT			34732	5853	3727	3058	1772	<b>%</b>	54102
Activities Test and Evaluation Organizations	Oreanization										
Range Support	8	ocr			10137	3900	6400	6999	\$700	612	33418
Other Test	2	OCT			8341	2100	1700	2731	1400	298	16870
Activities											
Government Furnished Property: N/A	hed Property:	Y/Z			11/147	106147	2695	01110	64710	21041	756145
Subtotal Product Development	elopment				80252	105542	8297	7858	9706	1786	118451
Support and Mariagement	i vialiagement duotion				18478	0009	8100	9400	7100	1210	50288
Subtorial Test and Evaluation	angron				\$15203	121894	92287	99028	71525	24947	924884
				Page	Page 7 of 14 Pages	S.			Exhibit R-3	۲-3	
					700						Item 92
					<b>\$</b>						



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATION	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ent	PE NL	PE NUMBER AND TITLE 0604768A Brill	TITLE Brilliant Anti-Armor Submunition	nti-Armo	r Submu	nition	ā <b>1</b>	Р <b>R</b> ОЈЕСТ <b>D687</b>
COST (In Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
D687 BATP3	0	15275	37136	34742	63336	63041	77439	36314	0	327283
C. Other Program Funding Summary: There are no other related RDT&E or other appropriation efforts.	re no other r	elated RDT&	E or other	appropriatio	n efforts.					
D. Schedule Profile	FY 1994	•	iz, (	FY 1995	•	FY 19%		•	FY 1997	•
Dem Val Phase I X• Dem Val Phase II CA CFT	7	•	· *	<b>7</b> 1	4	7	<b>.</b>	-	· ×	• ×
<ul> <li>Indicates activity is complete</li> </ul>										
			Page 8 of 14 Pages	4 Pages				Exhibit R-2	-2	

RD	RDT&E PROGRAM ELEMEN	RAM ELI	EMENT/PR	SJECT C	OST BR	EAKDO	T/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995	995
BUDGET ACTIVITY 5 - Engineerin	DGET ACTIVITY - Engineering And Manufacturing Develo	facturing	Development		PE NUMBER AND TITLE 0604768A Brill	AND TITLE	TITLE Brilliant Anti-Armor Submunition	mor Subm	nunition		PROJECT D687
A. Eroject Cost Breakdown Contract Engineering Support Developmental Test & Evaluation Program Management Support Program Management Personnel Total	ing Support st & Evaluation tent Support ent Personnel			FY 1994	된	FY 1995 10074 3409 1792 15275	FY 1996 26718 1747 4198 4473 37136	EY 1997 25183 2918 3645 2996 34742			
B. Budget Acquisition History and Planning Information	ition History an	d Planning In	formation								
Performing Organizations Contractor or Contract Government Method/Type Performing or Funding Activity Vehicle	nizations Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Northrop	SS-CPIF	DEC	274663	274663			10074	26718	25183	214632	276607
Grumman Corp In-House Support	8	ост					1792	4473	2996	13295	22556
SETA & Prog SS-CPFF NOV	sagement Organi SS-CPFF	izations NOV					985	1162	1184	4410	7741
Mgmt Spt AMCCOM MISC OGA	22	00CT 00CT					1697 727	2162	1773	0 2785	5632 5074
Activities  Test and Evaluation Organizations Range Support PO Other Test PO	ion Organization PO PO	0CT 0CT						747	1418 1500	1608	3773 5900
Activities  Government Furnished Property: N/A Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	nished Property: )evelopment nd Management Evaluation	N/A					11866 3409 15275	31191 4198 1747 37136	28179 3645 2918 34742	227927 7195 5008 240130	299163 18447 9673
				Page	Page 9 of 14 Pages	S			Exhibit R-3		
					,						1,00

Item 92

RDT&E BUDGET ITEM JU		FICATI	STIFICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibit	<b>₽</b>		DATE Fet	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	lent	PE NC 060	PE NUMBER AND TITLE 0604768A Brilli	D TITLE Brilliant Anti-Armor Submunition	nti-Armo	r Submu	nition		PROJECT D688
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D688 ATACMS BLK II	0	1986	56840	77916	1104	41663	0	0	0	264077
C. Other Program Funding Summary Missile Procurement, Army CA 6105 ATACMS BLK II	FY 1994	FY 1995	EY 1996	EY 1997	EY 1998	EY 1999 77028	EY 2000 104616	EY 2001 130676	To Compl 875600	Total Cost 1187920
D. Schedule Profile Static Test	FY 1994 2 3	4	1 7 2	FY 1995 2 3	4 >	FY 1996 2 3	3 6 4	_	FY 1997 2 3	4
Sled Test Engr Flight Test CDR DA IPR			×		<b>≺</b>	×		××		
		Ĩ	Page 10 of 14 Pages	4 Pages				Exhibit R-2	2	
										;

RDT&E P	ROGRA	MELE	RDT&E PROGRAM ELEMENT/PROJECT	OJECT C	OST BF	REAKDO	COST BREAKDOWN (R-3)		DATE F.	February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Manufact	uring [	)evelopmen		PE NUMBER AND 0604768A	PE NUMBER AND TITLE O604768A Brillia	DITLE Brilliant Anti-Armor Submunition	mor Subn	nunition		PROJECT <b>D688</b>
A. Project Cost Breakdown	æ			À		300					
Contractor Engr Support Development Test & Eval				FY 1994		5500 205	39489 1400	FY 1997 58914 2695	<b>~</b> !		
Program Management Spt Program Management Personnel Total	nnei					1970 2289 9964	9029 6922 <b>568</b> 40	10047 6260 77916			
B. Budget Acquisition History and Planning Information	ory and Plan	ıning İnf	ormation								
Performing Organizations											
Contractor or Contract	<u> </u>	Award or	Derforming	Project	Total						
		Obligation	Activity	Office	Prior to					Budget to	Total
Activity Vehicle Product Development Organizations	c Date	e).	EAC	EVC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Loral Vought SS/CPIF	F MA	MAY 95	182000	182000			\$500	39489	58914	81060	184963
In-House Support PO	50	<u>-</u>					2289	6922	6260	20991	36462
Ĭ	Organization	2 1									
More Ser Program SS/CPFF	FF OCT	<b>.</b>					1908	8477	8080	8062	72927
Misc OGA PO	007	<b>[</b> -					62	552	1967	2794	5375
Activities	,									i	
uation		1					,				
Kange Support PO	֚֚֚֓֞֞֞֞֞֞֓֓֓֓֓֓֓֞֜֟֓֓֓֓֓֞֞֓֓֓֞֡֓֞֓֓֓֞֞֞֞֓֡	<u>.</u>					202	1350	2035	4450	908
	3	•						₹	8	7007	7/10
Government Furnished Property: N/A	yerty: N/A										
Subtotal Product Development	T T						7789	46411	65174	102051	221425
Subtotal Support and Management	ement						1970	9029	10047	10856	31902
Subtotal Test and Evaluation	_						205	1400	2695	6450	10750
Total Project							4964	\$6840	77916	119357	264077
				Pase	Page 11 of 14 Pages	es			Exhibit R-3	r-3	
					808						Item 92

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	TSUL M	IFICATI	ON SHE	ET (R-2	Exhibit			DATE Fet	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Develor	Developn	pment	PE NU 060	PE NUMBER AND TITLE 0604768A Brilli	E NUMBER AND TITLE 0604768A Brilliant Anti-Armor Submunition	nti-Armo	r Submu	nition	ă ()	PROJECT <b>D686</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1988 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D686 ATACMS BLK IA	•	0	0	0	11847	31111	74049	72463	7405	197775
C. Other Program Funding Summary									To	Total

Cost

Compl

FY 1999 FY 2000 FY 2001

FY 1998

FY 1996 FY 1997

FY 1995

FY 1994

D. Schedule Profile: N/A Funds Begin in FY 1998

Missile Procurement, Army CA 6110 ATACMS BLK IIA (Begins FY 2002)

**608** 

Exhibit R-2

RDT&E BUDGET ITEM JU		IFICATI	ON SHE	ET (R-2	STIFICATION SHEET (R-2 Exhibit)			DATE FA	February 1995	200
BUDGET ACTIVITY			PEN	PE NUMBER AND TITLE	TITLE			<u>:</u> ]	1	PROJECT
5 - Engineering And Manufacturing Development	Developm	ent	090	0604768A E	<b>Brilliant Anti-Armor Submunition</b>	nti-Armo	r Submu	nition	1	DZNT
COST (in Thousands)	FY 1984 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
D2NT BAT OPERATIONAL TEST	0	0	288	1791	9929	3061	0	0	•	12330
C. Other Program Funding Summary: There are no other related RDT&E or other appropriation efforts.	re no other re	lated RDT&	E or other a	ppropriation	efforts.					
D. Schedule Profile:	FV 1994		<u>r</u>	<b>7</b>		FV 1096	¥		EV 1007	
1 Conduct IOTE Activities	2 3	4	1 2	2 3	4 - ×	2 ~ X	5 ω 4	-×	FI 199/ 2 3 X X	4
			Page 13 of 14 Pages	4 Pages				rhiji S. S. S. S. S. S. S. S. S. S. S. S. S. S	9	
			810							Item 92

RDT&E PROGRAM ELEMENT/PROJECT	T COST BREAKDOWN (R-3)	EAKDO	WN (R-3		DATE F8	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604768A Brilli	AND TITLE A Brilliar	ıt Anti-An	TITLE Brilliant Anti-Armor Submunition	unition	g O	PROJECT D2NT
A. Project Cont Breakdown  Operational Test & Eval  Total	FY 1994 FY 1995	366	FY 1996 299 299	FY 1997 1791 1791			
B. Budget Acquisition History and Planning Information							
Performing Organizations  Contractor or Contract  Government Method/Type Award or Performing Project  Performing or Funding Obligation Activity Office  Activity Vehicle Date EAC EAC  Product Development Organizations: N/A  Sunnort and Management Organizations: N/A	Total  Prior to  FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Test and Evaluation Organizations Other Test				299	1791	10249	12339
Activities  Government Furnished Property: N/A Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				299	1791 1791	10249	12339
	Page 14 of 14 Pages	Š			Exhibit R-3	Ę.	
	811						Item 92

RDT&E BUDGET ITEM J	EM JUS	TIFICAT	ION SH	USTIFICATION SHEET (R-2 Exhibit)	-2 Exhib	oit)		DATE FeI	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	Development	ent	PE NI 0 <b>0</b> 0	PE NUMBER AND TITLE 0604770A Joint Surv/Tgt Attack Radar System	nitle oint Sun	//Tgt Atta	ack Rada	r System		
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	29415	39655	18771	7884	7426	6276	4996	14965	i	Continuing Continuing
D202 Army Joint STARS	29415	33723	16990	7884	7426	6276	4996	14965	14965 Continuing Continuing	Continuing
D2CT JSTARS OPERATIONAL TEST	0	5932	1781	0	0	0	0	0	0	7713

Commanders must have the capability to detect, locate, classify and track moving and stationary targets for situation assessment to avoid surprise and attack targets out to and control data link. The Army will develop the ground components of the JSTARS under this PE, project D202. Also included in this PE is project D2CT with FY 95 and FY 96 funding for the Multi-service Operational Test and Evaluation (MOTE). The projects in this program element support research efforts in the Engineering and Mission Description and Budget Item Justification: This is a Tactical Intelligence and Related Activities (TIARA) program. US Forces have an urgent need for a units at critical times and places so commanders can employ their organic forces and firepower in support of deep, close and rear operations. The joint Army/Air Force program objective is to develop a radar, datalink, ground station, and airframe that will provide the capability to locate, track and classify tracked and wheeled vehicles beyond ground line-of-sight during the day and night and under most weather conditions. Radar data is distributed to ground station modules via a secure surveillance the range of existing and developing weapons. The Joint Surveillance and Target Attack Radar System (JSTARS) provides battle management and targeting of enemy wide-area surveillance and target attack radar system capable of continuous coverage out to a depth in excess of 100km beyond their Forward Line of Troops. Manufacturing development phases of the Acquisition Strategy and are therefore correctly placed in Budget Activity 5.

approach. Block I GSMs utilize the same prime mission equipment and will be developed and deployed on different platforms. The Block I Medium GSM (MGSM) is housed in a standard \$280 shelter and mounted on a 5 Ton Truck. The rapidly deployable Block I Light GSM (LGSM) is housed in a Standard Integrated Command Post integrated the GSM prime mission equipment into a Command and Control Vehicle (C2V) (a Bradley variant). Also included in this project is the development of the resulting in enhanced battle management as well as significant cost savings. These enhancements are being implemented in a phased approach. Significant enhancements by phase include: integration of Secondary Imagery Dissemination (Phase I), full design/test of the tracked vehicle (heavy) variant (Phase II), and Project D202: The Army will develop the ground components of the JSTARS under this PE/Project. The Ground Station Module (GSM) is being developed in a Block Shelter (SICPS) and mounted on a High Mobility Multi Purpose Wheeled Vehicle (HMMWV). A Block I Heavy GSM (HGSM) prototype was also assembled. This variant Block II GSM now called the Common Ground Station (CGS). The CGS will integrate signal, imagery, and other intelligence processing into a single ground station, integration/interface with other sensor systems (Phase III).

## FY 1994 Accomplishments

- Conducted Block I Light Technical Test (TT) (2743)
- Completed LGSM Engineering and Manufacturing Development Model Delivery (14544)
- Completed Block I Light Force Development Test & Evaluation (FDTE) (150)

Page I of 8 Pages

Exhibit R-2

Item 93

812

•

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604770A Joint Surv/Tgt Attack Radar System	tem
<ul> <li>Completed GSM Trainer development and delivery (7750)</li> <li>Completed LGSM software development (4228)</li> </ul>		
<ul> <li>FY 1995 Planned Program</li> <li>Obtain Block I Light LRIP Decision (306)</li> <li>Complete Data Link Mast Head redesign (4313)</li> <li>Release draft CGS Solicitation (4866)</li> <li>Continue LGSM EMD Program (19535)</li> <li>Complete LGSM Software Stress Testing (4012)</li> <li>Small Business Innovative Research (SBIR)/ Small Business Technology Transfer (STTR) program (691)</li> </ul>	ısfer (STTR) program (691)	
<ul> <li>FY 1996 Planned Program</li> <li>Complete LGSM EMD Program (7878)</li> <li>Obtain Milestone III/IV Decision (275)</li> <li>Initiate Phase I CGS design/system enhancements (8837)</li> </ul>		
<ul> <li>FY 1997 Planned Program</li> <li>Conduct Phase I CGS Critical Design Review (CDR) (1220)</li> <li>Complete CGS Phase I Integration (6089)</li> <li>Complete CGS Phase I Technical /User Assessment (575)</li> </ul>		
Project D2CT: D2CT provides for the Army's costs associated with the MOTE. All MOTE activities will be completed by 2Q96. This Joint Service Initial Operational Test and Evaluation (IOT&E) will support both the US Army and US Air Force in FY 96 Joint STARS Full Scale Production Decision. Project D2CT is not a new start. It is a transfer of effort from PE 0605712, Support of Operational Testing, Project D001 OPTEC Initial Operational Test and Evaluation.	All MOTE activities will be completed by 2Q96. This Joint is FY 96 Joint STARS Full Scale Production Decision. Project D001 OPTEC Initial Operational Test and Evaluation.	Service Initial Operational D2CT is not a new start.
FY 1994 Accomplishments: Not funded in FY 94		
<ul> <li>FY 1995 Planned Program</li> <li>Conduct MOTE Pre Test Planning and Training</li> <li>Develop Instrumentation of Test Hardware, Simulators and Facility (906)</li> <li>Conduct MOTE (3668)</li> <li>SBIR/STTR (125)</li> </ul>		
Раяе	Page 2 of 8 Pages.	Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION	SHEET (R.	2 Exhibit)		DATE February 1995	1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	ent	PE NUMBER AND TITLE 0604770A Join	TITLE Joint Surv	PE NUMBER AND TITLE 0604770A Joint Surv/Tgt Attack Radar System	dar System	2
<ul> <li>FY 1996 Planned Program</li> <li>Conduct MOTE (881)</li> <li>Complete Test Analysis and Reports (725)</li> <li>Obtain Milestone II/IV Decision (175)</li> </ul>						
FY 1997 Planned Program: Not funded in FY 97						
B. Program Change Summary Previous President's Budget	FY 1994 25955	EY 1995 40186	FY 1996 21849	EY 1997 25904		
Appropriated Value Adjustments to Appropriated Value FY94 a. SBIR Decrement (-390) b. Reprogrammed into PE (3850)	25955 3460	39655				
Current Budget Submit/President's Budget	29415	39655	18771	7884		
	Page	Page 3 of 8 Pages			Exhibit R-2	
		814				Item 93

RDT&E BUDGET ITEM JU		FICATION	ON SHE	STIFICATION SHEET (R-2 Exhibit)	Exhibit	3		DATE Fet	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060	PE NUMBER AND TITLE 0604770A Join	Oint Surv	//Tgt Atta	ıck Rada	ਮਸਮ Joint Surv/Tgt Attack Radar System		PROJECT <b>D202</b>
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 200° Estimate	Cost to Complete	Total Cost
D202 Army Joint STARS	29415	33723	16990	7884	7426	6276	4996	14965	Continuing	Continuing
C. Other Program Funding Summary  BA1080 Joint STARS Army TIARA Funding  Qty	EY 1994 57796	EY 1995 55239 8	FY 1996 82984 12	FY 1997 89855 12	FY 1998 94326 12	FY 1999 80609 10	<u>FY 2000</u> 86499 10	FY 2001 85516	To Compl Cont	Total Cost Cont
D. <u>Schedule Profile</u>	FY 1994 2 3	4	1 F 4	FY 1995 2 3	4	FY 1996 2 3	96 3 4	-	FY 1997 2 3	4
Conducted Block I Light Technical Test (TT)	*	•								
Completed Block I Light Force Development & Test Evaluation		*								
LGSM E&MD Model Delivery Completed GSM Trainer Development Complete LGSM Software Stress Testing Release Draft CGS Solicitation Obtain Block I Light LRIP Decision Obtain Milestone III/IV Decision Initiate Phase I CGS design/system enhancements Conduct CGS Phase I CDR Complete CGS Phase I Technical/User Assessment		**	* * *				××		×	×
			Page 4 of 8 Pages	8 Pages				Exhibit R-2	-2	
										Item 03

RDT&E P	RDT&E PROGRAM ELEMEN	LEMENT/PR	T/PROJECT COST BREAKDOWN (R-3)	SOST B	REAKDO	JWN (R-	3)	DATE	February 1995	99.
BUDGET ACTIVITY				PE NUMBER	PE NUMBER AND TITLE					PROJECT
5 - Engineering And Manufacturing Develo	Manufacturin	g Development	ıt	0604770A	0A Joint	Joint Surv/Tgt Attack Radar System	Attack Rad	dar Syste		D202
A. Project Cost Breakdown	=									
			FY 1994		FY 1995	FY 1996	FY 1997	7		
Primary Hardware Development	nent		14522		18291	7731	1180	. (		
Software Development			4388		5212	2150	1164			
Integrated Logistics Support			241		388	265	270			
Developmental/Operational Test and Evaluation	Test and Evaluation	-	899		783	650	008			
Contractor Engineering Support	port		4338		4530	3350	1948			
Government Engineering Support	pport		773		564	435	360			
Program Management Support	ort		1830		1451	885	915	. 10		
Program Management Personnel	nnel		2424		1813	1524	1247			
SBIR/STTR			0		691	0				
Total			29415		33723	16990	7884			
B. Budget Acquisition History and Planning Information	tory and Planuing	Information								
Performing Organizations										
Contractor or Contract	<b>5</b>									
Government Method	Method/Type Award or	Performing	Project	Total						
Performing or Funding	<b>8</b>		Office	Prior to					Budget to	Total
Activity	Date		EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	inizations								2000	The Property
Motorola SS/CPFF (92-C-L001)	FF May 92	104263	105260	63562	17750	17359	4775	0	1814	105260
Motorola SS/CPFF	FF Sep 91	10780	11150	11112	38	O	c	•	•	11160
(91-C-L006)	•		) 		}	•	•		•	00111
Motorola SS/CPFF (93-C-K257)	FF Sep 93	18102	18102	450	4300	4530	3350	1948	3524	18102
Unknown	COMP/CPFF Jul 96	<b>4</b> /2	7864	0	0	C	2000	2244	3630	797
Grumman SS/CPFF	FF Feb 92	10200	10883	4000	0	2000	2970	0	1913	10883
E-Systems SS/FFP	•	2700	2700	0		2700	c	c	<b>-</b>	0026
(88-C-0080)				•		) ) •	•	>	>	20/7
Cubic SS/FPI (93-C-0166)	Apr 93	3614	2234	374	1000	862	9	0	0	2234
			Page	Page 5 of 8 Pages	-			Exhibit R-3	ကု	
				, ,						3

Item 93

RDT&E PROGRAM ELEMENT	T/PROJECT COST BREAKDOWN (R-3)	COST BF	REAKDO	WN (R-3		DATE	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop	pment	PE NUMBER AND TITLE 0604770A Join	DA Joint	PENUMBER AND TITLE OCOMPACE ACTION System Sold System	Attack Rad	dar Syste		PROJECT <b>D202</b>
or Contract  It Method/Type Award or Perfor  or Funding Obligation Ac  Veh.ble Date	ming Project tivity Office EAC EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Tobyhanna MIPR Nov 94  Support and Management Organizations CECOM MIPR Misc MIPR SBIR/STTR  Test and Evaluation Organizations Various MIPR		2100	700 1082 3346 899	0 1060 3426 691 795	0 670 2269 650	0 495 2097 800	0	2800
Government Furnished Property  Contract  Method/Type Award or  Item or Funding Obligation Delivery  Description Vehicle Date  Product Development Property  Various Reqn  Support and Management Property: N/A  Test and Evaluatiou Property: N/A		Total Prior to FY 1994	FY 1994 300	FY 1995 300	FY 1996 300	FY 1997 300	Budget to Complete	Total <u>Program</u>
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		Total Prior to <u>FY 1994</u> 81598	FY 1994 24088 4428 899 29415	EY 1995 27751 5177 795 33723	FY 1996 13401 2939 650 16990	FY 1997 4492 2592 800 7884	Budget to Complete	Total Program
	Pa	Page 6 of 8 Pages 817	5			Exhibit R-3	5-3	Item 93

RDT&E BUDGET ITEM JU		FICATI	STIFICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibit			DATE	February 1995	195
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NL 060	PE NUMBER AND TITLE 0604770A Join	IITLE Joint Sun	PE NUMBER AND TITLE 0604770A Joint Surv/Tgt Attack Radar System	ick Rada	r System		PROJECT D2CT
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2'T JSTARS OPERATIONAL TEST	0	5932	1781	0	0	0	0	0	0	7713
C. Other Program Funding Summary	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Complete	Total Cost
Oty	7	8	82984 12	69833	94326	80609	86499	85516	Cont	Cont
D. Schedule Profile	FY 1994		<u>t.</u> .	, 199		FY 1996			FY 1997	- August
MOTE Pre Test Planning and Training	2	4	- ×	m	4	~ >	₩ <del>4</del>	<b>-</b>	2 3	4
Milestone II/IV Decision						<	×			
			Page 7 of 8 Pages	Pages				Exhibit R-2	.2	
										Itom 03

Item 93

RDT&E PROGRAM ELEMENT/PR	NT/PROJECT CO	OST BR	EAKDO	COST BREAKDOWN (R-3)		DATE F	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604770A Join	AND TITLE  A Joint 8	surv/Tgt A	) गा∟E Joint Surv/Tgt Attack Radar System	lar Syster		PROJECT <b>D2CT</b>
A. Project Cost Breakdown Operational Test and Evaluation SBIR/STTR	FY 1994 0 0	Æ	FY 1995 5807 125	FY 1996 1781 0	FY 1997 0 0			
Total  B. Budget Acquisition History and Planning Information	0		5932	1781	0			
Performing Organizations  Contractor or Contract  Government Method/Type Award or Performing Performing or Funding Obligation Activity  Activity Vehicle Date EAC  Product Development Organizations: N/A	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Support and Management Organizations SBIR/STTR  Test and Evaluation Organizations OPTEC MIPR Dec 94 7588	7588	0	0	125	1781	0	0	7588
Government Furnished Property: N/A	<b>-</b>	Total Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project				125 5807 5807	1781			
	Page (	Page 8 of 8 Pages				Exhibit R-3	ę.	

819

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	IFICATI	ON SHE	ET (R-2	Exhibit			DATE	February 1995	l se
<b>5</b> -	BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	evelopm	lent	PE NU 060	PE NUMBER AND TITLE 0604778A Posi	PENUMBER AND TITLE 0604778A Positioning System Development	ig Syster	n Develo	pment	i dina	3
	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
	Total Program Element (PE) Cost	4455	3797	9	4	\$	4	0	0	0	18208
5	D163 Modular Azimuth and Poaltioning System (MA 5) Hybrid Product Improvement Program (PIP)	3966	3332	0	0	0	0	0	0	0	15477
D168	D168 NAVSTAR Globel Poettoning System (GPS) Equipment	467	28	8	3	65	044	0	0	0	2731

A. Mission Description and Budget Item Justification
Project D163 provides for Engineering and Manufacturing Development (EMD) of a Hybrid Modular Azimuth and Positioning System(MAPS) into one host system, the frequent updates of the inertial positioning and orientation system without need of a local survey control and will limit inertial Position/Navigation (POS/NAV) errors. Embedded/Integrated GPS, Advanced GPS Receivers (AGR), Tactical GPS Anti-Jam Technology (TGAT) and Differential GPS. The projects in this program element Paladin (M109A6 155mm Self-Propelled Howitzer). The MAPS will be integrated with a Global Positioning System (GPS) receiver to provide rapid initialization and Project D168 provides for Army participation in the research and development phases of Army weapon systems requiring POS/NAV capabilities. It provides for the support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5. engineering development of several alternatives for integration of GPS receivers into selected systems. These alternatives include, but are not limited to

other potential users by decreasing their reliance on externally provided survey control points and, thus, increasing system effectiveness and survivability on the battlefield. Project D163 -MAPS Hybrid PIP: Maps Hybrid PIP is a product improvement of MAPS. The project is intended to improve the autonomous capability of Paladin and

## FY 1994 Accomplishments:

- Researched and developed alternatives related to system integration and application technology (\$2000)
  - Reviewed documentation and interface with host systems (\$431)
- Participated in studies, prototyping and integration of candidate systems (\$835)
  - Supported test and evaluations of GPS integration (\$722)

Page 1 of 7 Pages

Exhibit R-2

Item 94

RDT&E BUDGET ITEM JUSTIFICATION	USTIFICATION SHEET (R-2 Exhibit)	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604778A Positioning System Development	

## FY 1995 Planned Program:

- Continued Test and Evaluation (1536)
- Production and Field Retrofit Planning (670)
- Type Classification of MAPS Hybrid Unit (1059)
- Small Business Innovative Research (SBIR)/ Small Business Technology Transfer Program (STTR) (67)

Project D168- (NAVSTAR GPS) GPS sets were used in Operation Desert Storm and proved to be a significant force multiplier. GPS assures greater command and control and significantly reduces the likelihood of fratricide. New uses for GPS are being developed. These new uses require an analysis of the overall host vehicle operational POS/NAV system to support development of alternative GPS applications

## FY 1994 Accomplishments:

- Researched and developed alternatives related to system integration of GPS in selected weapon systems (293).
  - Reviewed documentation and interface with host systems (74).
- Developed and tested GPS anti-jam, differential and embedded applications (100).

## FY 1995 Planned Program:

- Continue development/testing of GPS anti-jam, differential and embedded technologies (100).
- Incorporation of new GPS technology into next generation user equipment through insertion of P3I (256).
  - Testing of prototype equipment (100).
    - SBIR/STTR (9)

## FY 1996 Planned Program:

- Procurement and testing of items in marketplace to remain current with NDI alternatives (to include embedding) (\$173).
  - Advanced GPS receiver framework conceptualization (non-hardware work) to meet evolving user requirements (\$171).
    - Air receiver exploration for MAGR follow-on replacement (\$116).

## FY 1997 Planned Program:

- Improved accuracy and time to fix studies for follow-on equipment requirements (125).
  - Test program for NDI aviation GPS receiver (MAGR follow-on/replacement) (154).
- Improved survivability of GPS capability (renewed antijam/antispoof and other threats response) (170).

Page 2 of 7 Pages

Exhibit R-2

Item 94

RDT&E BUDGET ITEM JUSTIFIC	ATION	STIFICATION SHEET (R-2 Exhibit)	2 Exhibit)		DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE	Dositioning	PE NUMBER AND TITLE 0604778A Positioning System Development	Plonment
B. Program Change Summary					
	FY 1994	FY 1995	FY 1996	FY 1997	
Previous President's Budget	4888	3846	462	451	
Appropriated Value	4888	3797	0	0	
Adjustments to Appropriated Value a. SBIR & STTR decrease (\$74) b. Independ Bencomming Action (\$340)	<del>4</del> 33	0	0	0	
Current Budget Submit/President's Budget	4455	3797	460	449	
	Page	Page 3 of 7 Pages			Exhibit R-2
					101

822

Item 94

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	IFICATI	ON SHE	ET (R-	2 Exhibit	a		DATE Fe	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopn	ent	PE NI 060	PE NUMBER AND TITLE 0604778A Posi	Positioning System Development	ng Syster	n Develo	pment		PROJECT D163
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Modular Azimuth and Postitoning System (MAPS) Hybrid Product Improvement Program (PIP)	3968	3332	0	0	0	0	0	0	٥	15477
C. Other Program Funding Summary. There are no other related RDTE or other Appropriation efforts.	re no other r	clated RDTE	or other Ap	ppropriation	efforts.					
D. Schedule Profile:										
	FY 1994	4	 Fr (	FY 1995	4	FY 1996		-	FY 1997	-
Software Design and Review Engineering & Development Test Ouality Test			4	n		7	n 1	-	۶	4
					:					
										•
										•
			Page 4 of 7 Pages	Pages				Exhibit R-2	2	

RDT&E PROGRAM ELEMENT/PROJECT COST	JECT COST BREAKDOWN (R-3)	7-3)	DATE	February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604778A Posi	E sitioning Syste	ਮπ∟E Positioning System Development	PROJECT It D163
A. Project Cost Breakdown;		:		
Contractor Engineering Support 2021	1994 FY 1995 2021 1400	FY 1996	FY 1997	
Government Engineering Support Developmental Test & Evaluation Operational (Qual) Test & Evaluation SBIR/STTR Total	1367 1250 600 0 0 615 67 3988 3332			
B. Budget Acquisition History and Planning Information: N/A				
	Page 5 of 7 Pages		Exhibit R-3	t R-3

824

Item 94

RDT&E BUDGET ITEM JUS	M JUST	<b>IFICATI</b>	ON SHE	ET (R-2	TIFICATION SHEET (R-2 Exhibit)	(		DATE FeI	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develop		ment	PE NU 060	PE NUMBER AND TITLE 0604778A POSÍ	E NUMBER AND TITLE 1604778A Positioning System Development	g Systen	n Develo	pment	ē 0	Р <b>ROJECT</b> <b>D168</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
NAVSTAR Global Positioning System (GPS) Equipment	467	\$	9	3	450	94	0	0	0	2731

C. Other Program Funding Summary: N/A

D. Schedule Profile: N/A

Page 6 of 7 Pages 825

Item 94

Exhibit R-2

OGRAM ELEMENT/PROJ	ECT COST BREAKDOWN (R-3)	(R-3)	DATE	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604778A Posi	TLE Ositioning Syste	אוזונ Positioning System Development	PROJECT D168
A. Project Cost Breakdown				
Developmental Test and Evaluation Government Engineering Support Contractor Engineering Support Total	FY 1994 FY 1995 100 100 185 194 182 171 467 465	FY 1996 0 291 169 460	FY 1997 154 170 125 449	
B. Budget Acquisition History and Planning Inform tion: N/A				
C. Funding Profile: N/A				
	Page 7 of 7 Pages		Exhibit R-3	-3
	200			Itom 0.4

Item 94

	RDT&E BUDGET ITEM J		TIFICAT	ION SH	IEET (R	USTIFICATION SHEET (R-2 Exhibit)	it		DATE Fet	February 1995	95
8UDG 5 - E	BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel	evelopment	ent	PE NI 060	PE NUMBER AND TITLE 0604780A Com	E NUMBER AND TITLE 0604780A Combined Arms Tactical Trainer (CATT)	I Arms T	actical Tı	rainer (C	ATT)	
	COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	50801	51375	59475	20669	3136	3212	15213	18727	143658	403198
D571	D571 Close Combat Tectical Trainer (CCTT)	50801	51375	59475	20669	3136	3212	3225	3220	0	233135
0581	D581 Aviation Combined Arms Tactical Trainer (AVCATT)	0	0	0	0	0	0	5486	7754	52429	64678
0582	D582 Engineer Combined Arms Tactical Trainer (ENCATT)	0	0	0	0	0	0	34.96	3763	58129	65388
0583	D583 Fire Support Combined Arms Tactical Trainer (FSCATT)	0	0	0	0	0	0	2897	3990	33100	38997

deployments, such as peacekeeping missions, are able to sustain essential warfighting skills when not at their home station. By being able to process a wide array of terrain and costly live fire and maneuver exercises as well as train tasks deemed too hazardous to conduct in the field. Fielded in both fixed site and mobile/transportable versions, Aviation Comt. ned Arms Tactical Trainer (AVCATT), Engineer Combined Arms Tactical Trainer (ENCATT), Fire Support Combined Arms Tactical Trainer (FSCATT) regional contingency missions. The combination of tough field and live fire training and realistic simulation training in CATT is the catalyst to prepare soldiers and their leaders for the uncertainties they will face in an unpredictable world. The projects in this program element support research efforts in the engineering and manufacturing demonstration programs executed by the Advanced Research Projects Agency (ARPA). By practicing skills in CATT, units are able to make more effective use of scarce tasks on a realistic, interactive synthetic battlefield. CATT's combination of manned simulators and staff officer workstations enables units to train as a combined arms data bases and modify the behavior of the computer generated opposing forces, CATT offers a virtually unlimited array of training options to support the Army's many A. Mission Description and Budget Item Justification. The Combined Arms Tactical Trainer (CATT) is a family of combined arms simulation systems designed to and Air Defense Combined Arms Tactical Trainer (ADCATT). CATT enables units, from crew to the Battalion Task Force level, to conduct a wide variety of cor. bat team in a cost effective manner. CATT reinforces the successes and corrects the shortcomings of the Simulator Network (SIMNET) and Aviation Network (AIRNET) support the Army's simulation-based Combined Arms Training Strategy. The specific systems that comprise CATT include Close Combat Tactical Trainer (CCTT), CATT enables both Active and Reserve component units to prepare for real world contingency missions. Units taking their CATT systems with them on operational development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

for the Close Combat Tactical Trainer (CCTT) which will enhance readiness of both active and reserve component forces. The program will develop a networked system Project D571 - Close Combat Tactical Trainer. This project provides for engineering and manufacturing development (EMD) and pre-planned product improvements service support systems, and command and control systems to create a fully integrated real-time collective task training environment. This trainer will allow soldiers to of interactive computer driven simulators, emulators and semi-automatea forces that replicate combat vehicles and weapon systems, combat support systems, combat

Page I of 6 Pages

Exhibit R-2

Item 95

## February 1995 0604780A Combined Arms Tactical Trainer (CATT) RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 5 - Engineering And Manufacturing Development **BUDGET ACTIVIT**

practice, repetitively, techniques which, if performed on real equipment, would be too hazardous, time-consuming and expensive. These trainers enhance realism and allow soldiers and units to learn tactical combat lessons on maneuver, command and control, and improved teamwork for increased survivability

### FY94 Accomplishments.

- Completed software requirement specification; conducted and completed spiral development of hardware/s. ftware builds 1 & 2 (41120)
- Supported data collection, analysis and dissemination; performed software independent verification and validation; developed life cycle estimates and provided program office support (7154)
- Provided government program management, engineering, technical and contract support (2527)

## FY 95 Planned Program:

- Conduct and complete spiral development of hardware/software builds 3 through 7 (40531)
- Support data collection, analysis and dissemination; perform software independent verification and validation; develop life cycle estimates and provide program office support (6292)
- Provide government program management, engineering, technical and contract support (3473)
  - SBIR/STTR (1079)

## FY 96 Planned Program:

- Preproduction Qualification Test (PPQT) for both fixed and mobile systems and prepare for fixed and mobile Initial Operational Test and Evaluation (IOT&E) (50838) Produce and deliver a fixed company team site (38 modules) and 2 mobile platoon sets (11 modules); perform software/hardware physical configuration audit; conduct
  - Maintain support services to the program office (6327)
- Provide government program management, engineering, technical and contract support (2310)

## FY 97 Planned Program:

- Conduct and support IOT&E and prepare for pre-planned product improvements (14706)
  - Maintain support services to the program office (3853)
- Provide government program management, engineering, technical and contract support (2110)

Page 2 of 6 Pages

Exhibit R-2

Item 95

828

RDT&E BUDGET ITEM JUSTII	FICATION	SHEET (R	STIFICATION SHEET (R-2 Exhibit)		DATE February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	ant	PE NUMBER AND TITLE 0604780A Com	D TITLE Combined	Arms Tactical	DE04780A Combined Arms Tactical Trainer (CATT)
B. Program Change Summary					
Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SBIR/STTR Decrement (-820)	FY 1994 52921 52921 -2120	FY 1995 52160 51375	FY 1996 41771	FY 1997 10772	
b. Reprogramming 10dal (-1300)  Current Budget Estimate Submission (BES)	50801	51375	59475	20669	
	Pag	Page 3 of 6 Fages			Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATION	ON SHE	ET (R-2	Exhibit			DATE FeI	February 1995	995
3บออยา Activity 5 - Engineering And Manufacturing Development	Sevelopm	ent	PE NU 060	PE NUMBER AND TITLE 0604780A Com	ITLE ombinec	I Arras ī	actical T	אוזונ Combined Arrıs Factical Trainer (CATT	_	Р <b>ROJECT</b> <b>D571</b>
COST (In fhousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1399 Estimete	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
0571 Close Combat Tactical Trainer (CCTT)	50801	51375	59475	50669	3136	3212	3225	3220	0	233135
C. Other Program Funding Sumreary									É	Total
OPA3, Appropriation	FY 1994 0	FY 1995 31808	EY 1996 30655	FY 1997 88520	FY 1998 98509	FY 1999 103682	FY 2000 27091	FY 2001 15830	Compl 0	Cost 402095
NA0170 SIMNET/CCTT Military Construction, A Appropriation	7500	0	10500	17600	20000	0	0	0	0	25600
Operation and Maintenance, A Appropriation	0	0	415	8008	7537	13190	13190	13190	Cont'd	Cont'd
D. <u>Schedule Profile</u>	FY 1994	4	- Fr C	FY 1995	4	9661 ű.	96	-	FY 1997	-
Spiral Build 1	· *		-		•	:			<b>1</b>	t
Spire' Build 2 Spiral Build 3		×	* *							
Spiral Build 4			×							
Spiral Build 6				<	×					
Spiral Build 7	•				×					
Software PDR	×		* *							
Hardware CDR		×	ţ							
Software CDR			×							
CSCI					×					
FQT/QS Fielding Decision						٠,	•			
PPQT Fixed Site							×	>		
In City Substitute								<	÷	
O LE/WITESTONE THE									<b>×</b>	
			Page 4 of 6 Pages	Papes				Exhibit R-2	8	

830

Item 95

RDT&E PROGRAM ELEMENT/PROJ	OGRAM EL	EMENT/P		ECT COST BREAKDOWN (R-3)	EAKDO	WN (R-3			DATE	February 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel	ng And Manu	facturing [	Jevelopment	ţ	PE NUMBER AND TITLE 0604780A Com	AND TITLE	ined Arms	אוזוננ Combined Arms Tactical Trainer (CATT)	Trainer (C	1_	PROJECT <b>D571</b>
A. Project Cost Breakdown  Hardware Design and Manufacturing Software Design and Manufacturing Hardware/Software Integration System Test and Evaluation Contractor Program Management/System Engineering Contractor Other Support Program Office/Technical Support Government Agency Support Support Contracts SBIR/STTR Total  B. Budget Acquisition History and Planning Inform Performing Organi. ations	Project Cost Breakdown  rdware Design and Manufacturing  ftware Design and Manufacturing  rdware/Software Integration  stem Test and Evaluation  ntractor Program Management/System Engineering  ntractor Other Support  ogram Office/Technical Support  vernment Agency Support  port Contracts  IR/STTR  Budget Acquisition History and Planning Information	stem Enginær	ing ornation	FY 1994 12328 13430 882 821 13120 538 2527 3978 3177		FY 1995 12151 13238 870 810 12932 530 3473 2367 3925 1079 51375	FY 1996 15242 16604 1091 1016 16221 665 2310 3590 2736 89475	FY 1997 4409 4803 316 294 4692 192 2110 2280 1573			
Contractor of Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organizations Loral FSC C-CPAF/ T&M/FFP	ent Organizations C-CPAF/ T&N/FFP	Nov 92	178320	178320	31125	41120	40531	50838	14706	0	178320
Support and Management Organizations NAWC-TSD MIPR De	gement Organizati MIPR	ions Dec 92	11566	11566	1146	2527	3473	2310	2110	0	11566
RCI	T&M	Feb 93	3687	3687	2914	773	0	0	0	0	3687
MICOM	MIPR	Nov 95 Jan 94	/893 1020	1020	<b>-</b> -	2056 1020	1294 0	2490	2053	0 0	7893
Sherikon	T&M	Oct 94	4400	4400	0	0	1800	1800	800	0	4400
Miscellaneous SBIR/STTR	Various N/A	Various N/A	25170 N/A	25170 N/A	2837	3305	3198 1079	2037	1000	12793	25170
				Page	Page 5 of 6 Pages	5			Exhibit R-3	က္	
					831						Item 95

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604780A Com	AND TITLE	PE NUMBER AND TITLE 0604780A Combined Arms Tactical Trainer (CATT)	Tactical	Trainer (C	↓ _ i	PROJECT <b>D571</b>
Government Furnished Property: Not Applicable							
Subtotal Product Development Subtotal Support and Management	Total Prior to EY 1994 31125 6897	FY 1994 41120 9681	FY 1995 40531 10844	FY 1996 50838 8637	FY 1997 14706 5963	Budget to Complete 0 12793	Total Program 178320 42022
Subtotal lest and Evaluation  Total Project	38022	50801	\$1375	59475	20669	12793	233135
					α Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.Ξ.	<u>S</u>	
	28 0 00 10 0 28						Irom 05

832

Item 95

RDT&E BUDGET ITEM JI	EM JUS	TIFICAL	TION SH	IEET (R	USTIFICATION SHEET (R-2 Exhibit)	ř()		DATE Fet	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develo	Jevelopm	pment	PE NI 060	PE NUMBER AND TITLE 0604801A Avia	E NUMBER AND TITLE 0604801A Aviation - Engineering Development	Enginee	ring Dev	elopment		PROJECT DC45
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC45 Aviation Life Support Equipment (ALSE) Engineering Manufacturing Development	8221	4650	5142	6689	7835	7153	2488	2494	2494 Continuing Continuing	Continuing

A. Mission Description and Budget Item Justification: This PE provides engineering development to programs associated with Aviation Life Support equipment (ALSE) Project DC45 makes battlefield survivability possible and enhances the aircrew's ability to return to fight again through new protective clothing ensembles, aviator protective masks, laser protective visors, survival kits, restraint systems, integrated flight helmets, and microclimatic cooling devices. The Project in this Program Element supports research efforts in the Engineering Manufacturing Development Phase of the Acquisition Strategy and is correctly placed in Budget Activity 5.

related training activities. Engineering development programs will focus on air vehicle integration, airworthiness qualification and user evaluation of multiple technologies equipment which are unique and necessary for the sustainment and enhanced survivability or Army aircrews and passengers on the future integrated battlefield and during risk through early user evaluation and to reduce program design and test cost and schedules. Both joint and service independent efforts will be pursued under the scope of program effort to enhance and maximize aircrew performance in force modernized aircraft. Maximum advantage will be taken of simulation to reduce program technical protection against emerging new threat systems; product improvements to existing helmets to improve performance and increase commonality; microclimatic cooling to airbag technology to the APACHE aircraft to improve crash protection and enhanced aircrew survivability; and follow-on air vehicle integration and test of Air Warrior improve aircrew performance and endurance in harsh environments and while encumbered with NBC protective equipment; development and adaptation of automotive Project DC45-Aviation Life Support Equipment (ALSE)-Engineering Development: This project provides engineering development for those systems and items of to improve aircrew mission performance, aircrew comfort, aircrew and aircrew station interface, safety, and survivability. These programs include: advanced laser

## FY 1994 Accomplishments:

- Completed EMD for Inflatable Body and Head Restraint System (IBAHRS) (Joint Service) (427)
- Initiated prototype testing and production planning for Lightweight Motor Blower (LWMB) for M43A1E1 Mask (1860)
- Continued product improvement and follow-on operational testing of the Aircrew Integrated Helmet System (AIHS)(2442)
  - Continued Aircrew Microclimatic Conditioning System (AMCS) prototype test and evaluation (1692)
- Initiated production contract planning for Lightweight Motor Blower (LWMB) for M43A1E1 Mask (1800)

## FY 1995 Planned Program:

- Initiate Cockpit Airbag System (CABS) EMD for the AH-64 Apache (2017)
  - Continue AIHS (P31) efforts (1000)
- Complete AMCS test and evaluation (672)
- Initiate EMD for Advanced Laser Eye Protection (LEP) effort (Joint Service) (925)

Page I of 5 Pages

ftem 96

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATIO	N SHE	ET (R-2	Exhibit			DATE	February 1995	966
8- Engineering And Manufacturing Development Selevettr (36)	evelopm	ent	PE NU 060	PE NUMBER AND TITLE 0604801A AVÍA	tion	Enginee	- Engineering Development	elopmen		PROJECT DC45
<ul> <li>FY 1996 Planned Program:</li> <li>Continue CABS EMD AH-64 Apache (2012)</li> <li>Initiate program planning for the Joint Cockpit Air Bag Sys</li> <li>Continue Product Improvement of the AIHS in EMD (1075</li> <li>Continue EMD for Advanced Laser Protective Visor (1476)</li> </ul>	Air Bag Syst EMD (1075 Visor (1476)	System (JCABS) EMD Program (Joint Service) (579) 075 76)	EMD Prog	gram (Joint !	Service) (57!	6				
<ul> <li>FY 1997 Planned Program:</li> <li>Complete EMD qualification test and evaluation of CABS for the AH-64 Apache (1864)</li> <li>Continue JCABS EMD Program (Joint Service) (2080)</li> <li>Complete AIHS P31 testing (900)</li> </ul>	n of CABS fe (2080)	or the AH-64	Apache (18	364)						
<ul> <li>Complete EMD for the Advanced LEP (Joint Service) (1200)</li> <li>Initiate EMD Program for Nuclear, Biological and Chemical Advanced Initiatives (855)</li> </ul>	srvice) (1200 ind Chemica	) I Advanced I	nitiatives (8	(55)						
B. Program Change Summary										
Previous President's Budget Appropriated Value FY94 Adjustments to Appropriated Value a. SBIR /STTR (-89)		FY 1994 8569 8569 -348	된	FY 1995 4672 4650	FY 1996 5098	FY 1997 6844	<u>1997</u> 6844			
b. Reprogrammed out of PE (-259)  President's Budget Submission		8221		4650	5142	89	6689			
C. Other Program Funding Summary									l	1
RDT&F. A Budget Activity 4	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Total Cost
PE 0603801A Project DB45 Aviation Life Support Equipment (ALSE) Aviation Advanced	9764	<b>1</b> 666	3907	4238	2813	2740	0	0	0	33459
Aircraft Procurement Army (ALSE) SSN AZ3110	7192	8809	9737.	9577	10281	10958	9954	9953	Continue	Continue
			Page 2 of 5 Pages	Pages				Exhibit R-2	2	
			834							Item 96

RDT&E BUDGET ITEM	13	ATION	STIFICATION SHEET (R-2 Exhibit)	-2 Exh	ibit)		DATE	E February 1995	5
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopment		PE NUMBER AND TITLE 0604801A Avia	D TITLE Aviatio	n - En	TITLE Aviation - Engineering Development	Develo	pment	
D. Schedule Profile	FY 1994		FY 1995	•	-	FY 1996	,	FY 1997	
AH-64 CABS EMD Contract Award Critical Design Review (CDR) Development Test (DT)	n 1	•	· ×	•	-		<del>,</del>	, x	+
Aircrew Microclimatic Conditioning System (AMCS) Initial Technical Tests Complete Operational Test Milestone III IPR		*	×	×					
Advanced Laser Eye Protection (LEP)  Dem/Val Phase  EMD Phase  Preliminary Design Review (PDR)  Initiate Design Verification Testing				×		× ×			
Joint Cockpit Air Bag System (JCABS) Dem/Val Contract Award PDR EMD	*	×	<b>*</b>			×			
		Page	Page 3 of 5 Pages				Ä	Exhibit R-2	

RDT&E PROGRAM ELEMENT/PROJECT	GRAM ELI	EMENT/F	ROJECT	COST	BREAKDOWN (R-3)	OWN (F	(-3)		DATE Fe	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	d Manufactu	ring Devel	opment		PE NUMBER AND TITLE 0604801A Avia	Aviation	ντης Aviation - Engineering Development	ring Dev	elopmen		PROJECT DC45
A. Project Cost Breakdown	WD										
Contractor Engineering Support Program Management Support Total	upport pport			FY 1994 7359 862 8221	FY 1995 2575 2075 4650		FY 1996 2492 2650 5142	FY 1997 3050 3849 6899			
B. Budget Acquisition History and Planning Information	istory and Plann	ing Informati	ion								
Performing Organizations Contractor or Government Performing Activity	Contract Method/Type or Funding	Award or Obligation	Performing Activity	Project Coffice	Total Prior to	200	Ì	Ì		Budget to	Total
JCABS Simula Phoenix, AZ	C-FFP	<u>vais</u> Mar 1997	X S	EAL	0	1994	F1 1995	1930	1400 1400	Complete 2400	Program 3800
AH-64 CABS Simula Phoenix, AZ	SS-CPFF	May 1994			550	0	1000	1312	750	0	3612
AMCS, MRI,, Kansas City, Mo.		Mar 1994			4777	2374	200				7651
Advanced LEP NAWC Warminister, PA	C-CPFF	July 1995	1931	1931	0	0	425	891	615	0	1931
Miscellaneous Subtotal	SS/C-CPFF	FY 95-97	Υ/X	N/A	5595 10922	3512 5886	628 2553	333 2536	340 3105	0 2400	10408
Support and Management Organizations Various Organizations MIPR Total Performing	t Organizations MIPR	Various	K/X	N/A	5067 15989	233 <b>5</b> 8221	2097 46 <b>5</b> 0	2606 5142	3794 6899	5386 7786	21285
Government Furnished Property Not Applicable	roperty Not App	licable									
				Page 4	Page 4 of 5 Pages				Exhibit R-3	3	•
					836						Item 96

February 1995	nent	Total Program 27402 21285	48687			
DATE	PE NUMBER AND TITLE OCO4801A Aviation - Engineering Development	Budget to Complete 2400 5386	7786			
-3)	- Engineer	FY 1997 3105 3794	6689			
ROJECT COST BREAKDOWN (R-3)	ND TITLE	FY 1996 2536 2606	5142			
<b>PREAK</b>	PE NUMBER AND TITLE 0604801A AVIA	<u>FY 1995</u> 2553 2097	4650			
T COST		FY 1994 5886 2335	8221			
MENT/PROJEC	ing Development	Total Prior to <u>FY 1994</u> 10922 5067	15989			
RDT&E PROGRAM ELEMENT/P	вирсет астилту 5 - Engineering And Manufacturing Development	Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation	Total Project			

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SUL ME	TIFICAT	HS NOI	EET (R.	2 Exhib	it)		DATE <b>Fel</b>	February 1995	95
8006 <b>5</b> - [	BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	evelopm	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604802A Weal Development	тге Veapons It	And Mur	nitions E	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	5	
	COST (in Thousands)	FY 1984 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
	Total Program Element (PE) Cost	20865	16900	15928	14607	5970	0	0	1896	Continuing	Continuing
D134	D134 OBJECTIVE INDIVIDUAL COMBAT WEAPON ENGINEER* G DEVELOPMENT	0	0	0	0	0	0	0	9861	Continuing	Continuing
D284	D284 MULTI PURPOSE INDIVIDUAL MUNITION	0	0	12309	14607	5970	0	0	0	0	32886
0230	D290 BUNKER DEFEAT MUNITION	6198	2807	0	0	0	0	0	0	0	8640
D531	105MM HOWITZER AMMUNITION IMPROVEMENT	5615	3128	3619	0	0	0	0	0	0	28610
D613	MORTAR SYSTEMS	8062	11166	0	0	0	0	0	0	0	72386

Munition (MPIM) provides the infantry with a fire-and-forget weapon capable of defeating enemy forces in buildings, bunkers and lightly armored vehicles. The Bunker Defeat Munition (BDM) is an interim solution to provide the individual soldier the ability to destroy field fortifications from a standoff position several years before the MPIM is ready. The howitzer ammunition effort supports development of ammunition for the M119A1 Howitzer. The PE also supports qualification of an Improved Mortar Ballistic Computer (IMBC). Projects within this Program Element support research efforts in the engineering and manufacturing development phases of the A. Mission Description and Budget Item Justification: Provides for engineering development of weapons and munitions systems. The Multi-purpose Individual acquisition strategy and are therefore correctly placed in budget activity 5. Project D284- Multi Purpose Individual Munition: Provides for an Engineering Manufacturing Development (EMD) of a lightweight, shoulder fired, multiple purpose lethality over the AT4 and will be multiple target capable. System design will allow for growth, service life extension and technology insertion to support the U.S. Army weapon. Provides the infantry with a fire and forget weapon capable of defeating enemy forces in buildings, bunkers, and lightly armored vehicles. The Multiple Purpose mission of crisis response to regionally based threats. The Army and U.S. Marine Corps have initiated a memorandum of agreement for horizontal technology integration Individual Munition/Short Range Anti-tank weapon (MPIM/SRAW) is capable of being fired quickly from its carrying configuration and can be safely fired from an enclosure for the close battle. It will replace the current AT4 system which was designed to defeat only light armor. This system will have tremendously increased effort utilizing the USMC SRAW flight module/launcher as the carrier for the MPIM warhead.

FY 1994 Accomplishments: Not applicable

Exhibit R-2

Item 97

838

Page I of 18 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	ngineering
FY 1995 Planned Program: Not Applicable		
FY 1996 Planned Program:  Proceed with MPIM/SRAW EMD (3384)  Develop Program Milestone II documentation  Prepare request for proposal		
<ul> <li>Award E.M.D contract</li> <li>Conduct system level trade studies (336)</li> <li>Develop software (702)</li> <li>Procure bus/launcher hardware for Pre-production testing (PPT) (6955)</li> <li>Procure and deliver warhead components for PPT (932)</li> </ul>		
<ul> <li>FY 1997 Planned Program:</li> <li>Continue MPIM/SRAW EMD (2967)</li> <li>Conduct preliminary design review (1551)</li> <li>Conduct Early User Test (298)</li> <li>Conduc Critical Design Review (2127)</li> </ul>		
<ul> <li>Complete Limited User Test (497)</li> <li>Conduct PPT (526)</li> <li>Procure hardware components for production qualification testing (4867)</li> <li>Continue software development (1077)</li> </ul>		
Project D290 Bunker Defeat Munition: This project provides for the development and type classification of a throwaway munition for neutralizing earth and timber field fortification, and breeching masonry and reinforced concrete structures.	nt and type classification of a throwaway munition for	r neutralizing earth and timber field
<ul> <li>FY 1994 Accomplishments:</li> <li>Completed side-by side tests of candidate systems (5498)</li> <li>Down-selected to "best value" system (300)</li> <li>Initiated validation test to support type classification standard and materiel release (200)</li> <li>Conducted TC-LP (200)</li> </ul>	case (200)	
Раяе	Page 2 of 18 Pages	Exhibit R-2

Item 97

UNCLA

839

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	HEET (R-2 Exhibit)	DATE February 1995
Manufacturing Development	PE NUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	ngineering
<ul> <li>FY 1995 Planned Program:</li> <li>Conduct final Technical Test/Operational Test program (2200)</li> <li>Materiel release (352)</li> <li>Small Business Innovation Resear.h (SBIR)/Small Business Technology Transfer (STTR) (55)</li> </ul>	er (STTR) (55)	
FY 1996 Planned Program: No planned Program.		
FY 1997 Planned Program: No planned Program		
Project D531-105MM How Ammo IMP: This project provides for the fielding of an extended range 105MM artillery projectile for the M119A1 Howitzer and development of self-destruct fuzing technology for munitions.	an extended range 105MM artillery projectile for the	: M119A1 Howitzer and
<ul> <li>FY 1994 Accomplishments:</li> <li>Multi-phase hardware contract increments to provide Development Test &amp; Evaluation (DT&amp;E) hardware (836)</li> <li>XM234 self-destruct fuze multi-phase contract increment (2664)</li> <li>Load, assemble, and pack of EMD test cartridges at Lone Star Army Ammunition Plant (L.SAAP) (372)</li> <li>In-house performance testing and envelope studies of the XM80 grenade and XM915 projectile (188)</li> <li>EMD testing with self destruct hardware (417)</li> <li>Evaluation of all design hardware concepts, follow up all contracts and testing (1138)</li> </ul>	uation (DT&E) hardware (836) on Plant (L.SAAP) (372) M915 projectile (188)	
<ul> <li>FY 1995 Planned Program:</li> <li>Increment to contract to provide containers and additional grenade fuzes (174)</li> <li>New machining operation added to grenade body process (249)</li> <li>Procure additional projectile bodies (90)</li> <li>Load, assemble, and pack (LAP) of Dual Purpose Improved Conventional Munition (DPICM) test cartridges at LSAAP (360)</li> <li>EMD testing, including HE airburst reliability, HE Sequential Environmental Safety Reliability, Twelve Meter Drop, SD Fuze Evaluation, Demonstration performance and suitability to enter DT&amp;E (459)</li> <li>XM80/XM24 Performance Testing, Degradation Effects (85)</li> <li>AFATDS fire control software support program, USAFAS/ARDEC (50)</li> <li>Development Test and Evaluation: safety phase (300)</li> <li>Engineering evaluation of performance, follow up all testing (1295)</li> <li>SBIR/STTR decrement (66)</li> </ul>	ion (DPICM) test cartridges at LSAAP (360) ifety Reliability, Twelve Meter Drop, SD Fuze Evalu	ation, Demonstration performance
Page 3	Page 3 of 18 Pages	Exhibit R-2

840 UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION S	JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604802A Weapons And Munitions Engineering	ngineering
	Development	

## FY 1996 Planned Program:

- LAP of remainder of DT&E test cartridges (780)
- Development test and evaluation: testing (1870)
- Follow up on all tests, evaluate test results, prepare technical data package for Milestone III. Finalize reports (969)

# FY 1997 Planned Program: No planned program

This project also provides for the qualification of a full range training cartridge for the 120mm Battalion Mortar System to provide a realistic training alternative at a lower mobility, and accuracy of mortar systems. Current mortar systems include conventional ammunition with a variety of fuzing and applications, weapons that range from man-portable 60mm to vehicle-mounted 120mm mortars, and related equipment such as fire control, mortar ballistic computer, training devices, and ammunition. This project provides for the qualification of a new Mortar Ballistic Computer to replace and insure continued maintainability of the nearly obsolescent current M23 version. Project D613- Mortar Systems: This program provides funds to develop existing and emerging technology to enhance the effectiveness, lethality, versatility of use, cost than training with high explosive service ammunition, and for the qualification of an illumination round (conventional and infrared)

## FY 1994 Accomplishments:

- Developed software to provide ballistic data for all existing and planned mortar munitions (3027)
  - Evaluated and selected hardware platform for all Improved Mortar Ballistic Computers (125)
- Evaluated and analyzed materiel requirements to achieve mortar systems mobility and accuracy requirements. Developed a program plan for a mortar fire control system (900)
  - Developed, tested and type classified a 120mm mortar Full Range Training Cartridge (5000)

## FY 1995 Planned Program:

- Complete development of IMBC software (603)
- Conduct pre-production qualification testing (PPQT) of IMBC (153)
  - Conduct operational testing of IMBC (673)
    - Type classify the IMBC (1502)
- Type classify the Full Range Training Round (300)
- Conduct PPQT for the Full Range Training Round (1700)
- Complete development of 120mm illumination (conventional and infrared) rounds (4200)
  - Conduct engineering and PPQT (1800)
    - SBIR/STTR decrement (234)

Exhibit R-2

841

Page 4 of 18 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ATION	SHEET (R	-2 Exhibit)		DATE February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604802A Weal Development	o πτιε Weapons A ent	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	Engineering	
FY 1996 Planned Program: No planned program						
FY 1997 Planned Program: No planned program						
B. Program Change Summary Previous President's Budget	EY 1994 20346 20346	EY 1995 9130	EY 1996 1837	EY 1997 1862		
Adjustments to Appropriated Value Current Budget Submit/President's Budget	+519 20865	16900	15928	14607		
	Page	Page S of 18 Pages			Exhibit R-2	
		842				Item 97

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	<b>IFICATI</b>	<b>JHS NC</b>	:ET (R-2	Exhibit	(		DATE Fet	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	TILE Veapons of	And Mun	itions Er	ngineerin	: i :	РРОЈЕСТ <b>D134</b>
COST (in Thousends)	FY 1994 Actual	FY 1985 Estimate	FY 1906 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D134 OBJECTIVE INDIVIDUAL COMBAT WEAPON ENGINEERING DEVELOPMENT	0	0	0	0	0	0	0	1996	1996 Continuing Continuing	Continuing

C. Other Program Funding Summary Not applicable

D. Schedule Profile Not applicable

Page 6 of 18 Pages 843

Exhibit R-2

RDT&E BUDGET ITEM JU		STIFICATION SHEET (R-2 Exhibit)	ON SHE	ET (R-2	Exhibit	(2)		DATE Fel	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NL 060 Dev	PE NUMBER AND TITLE 0604802A Wea Development	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	And Mun	nitions E	ngineerin		PROJECT D284
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Satimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Coat
D284 MULTI PURPOSE 'NDIVIDUAL MUNITION	0	0	12309	14607	5970	0	0	0	0	32886
C Other Program Funding Summary									f	F
PE 0603313A, Proj D357 Missile Procurement, Army, Budget Activity 2, SSN C09100	FY 1994 0	FY 1995 5601 0	FY 1996 4575 0	FY 1997 3892 0	FY 1998 0	FY 1999 0 30851	FY 2000 0 49770	FY 2001 0 49762	Compl 0 cont	Cost 10468
D. Schedule Profile										
•	FY 1994		ш, ,	FY 1995		¥ 195		,	Y 199	
Award EMD contract for MPIM/SRAW Conduct Freliminary Design Review Begin Pre-production Tests (PPT) Conduct critical design review Initiate & complete Limited User Test	7	₹	Date 7 of 18 Dates	33	4	74	~ × •	- ××	m ×	4 ×
			844	1 000						Iter: 97

RDT&E PROGRAM ELEMENT/PROJECT		OST BR	<b>EAKDO</b>	COST BREAKDOWN (R-3)	•	DATE Fe	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604802A Weal Development	AND TITLE A Weap	ons And A	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	Engineeri		PROJECT D284
A. Project Cost Breakdown Primary hardware development Program management support Developmental Test & Evaluation Total	FY 1994	H	EY 1995	EY 1996 10458 1641 210 12309	EY 1997 11298 1588 1721 14607			
B. Budget Acquisition History and Planning Information								
Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Yehicle Date EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	EY 1995	EY 1996	EX 1997	Budget to Complete	Total Program
Prime TBD TBD TBD	TBD	0	0	0	10458	11298	3427	25183
Support and management Organizations PM CCAWS, RSA PO MICOM, RSA, AL PO MISC MISC Test and Evaluation Organizations					503 664 474	734 668 186	491 446 125	1728 1778 785
TECOM, APG, PO					210	1721	1481	3412
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project					10458 1641 210 12309	11298 1588 1721 14607	3427 1062 1481 5970	25183 4291 3412 32886
	Page 8	Page 8 of 18 Pages 845				Exhibit R-3	6	Item 97
		212						

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATIC	N SHE	ET (R-2	Exhibit	9		DATE Fet	February 1995	960
вирсет астімту 5 - Engineering And Manufacturing Development	Developm	ent	PE NL 060 Dev	PE NUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	mre Veapons It	And Mun	itions Er	ngineerin		PROJECT D290
COST (in Thousands)	FY 1994 Actual	FY 1905 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
D290 BUNKER DEFEAT MUNITION	86.29	2007	0	0	0	0	0	0	0	9840
C. Other Program Funding Summary Procurement Ammunition, Army: Bunker Defeating Munition, SSN E88401	FY 1994 0	EY 1995 7707	EY 1996 0	FY 1997 0	FY 1998 0	FY 1999 0	FY 2000	FY 2001 0	To Compl	Total Cost 7707
D. Schedule Profile  Side-by-side tests of candidate systems Down select to "best value" system Validation test to support mat" I release Conduct TC-L.P Conduct validation test program Complete type classification standard Materiel release  • Denotes completed.	FY 1994 X*	<b>→ **</b>	T C	FY 1995	- → ××	FY 1996	<b>▼</b> % ~ ×	-	FY 1997 2 3	<b>→</b>
			Pare 2 of 18 Pares 846	8 Pages				Exhibit R-2	2	Item 97

RD	RDT&E PROGRAM ELEMEI	RAM ELE	EMENT/PROJECT		OST BR	EAKDO	COST BREAKDOWN (R-3)		DATE F	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ng And Manı	ıfacturing i	Development		PENUMBER AND THE 0604802A VV ea Development	AND TILE A Weapo	ons And N	PENUMBER AND TITLE 0604802A Vveapons And Munitions Engineering Development	Engineeri		PROJECT D290
A. Pro ect Cost Breakdown Contracts	Breakdown			FY 1994 3600	둺	FY 1995 0	EY 1996 0	EY 1997			
Test and Evaluation Project management and Engineering SBIR/STTR Total	on nt and Enginecrii	89		791 1807 0 6198	4	1352 1200 55 2607	0000	0000			
B. Budget Acquisition History and Planning Information	sition History an	d Planning Inf	<u>formation</u>								
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity Vehicl	nizations Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office	Total Prior to	FV 1994	FV 1995		FV 1007	Budget to	Total
Product Development Organizations Talley Defense Sys FP	nent Organizatio s FP	DEC 94	3600	3600	0	3,009			7.27		3600
Support and Management Organizations ARDEC-Picationy	agement Organi	zations	3797	3797	• •	1807	1200	· c	· -	· c	300,
SBIR/STTR Test and Evaluation Organizations	on Organization	•			•		\$\$	•	>	•	55
TECOM-APG, MD; YPG; RTTC,	ı		2233	2233	0	161	1352	0	0	0	2143
Redstone Ars., AL  Government Furnished Property: None	ished Property:	None				6					
Subtotal Support and Management Subtotal Test and Evaluation	nd Management Svaluation					3600 1807 791	1255				3600
Total Project						8619	2607				8805
				d		,			i i	•	
				l axe	rake 10 of 18 rages	3			EXMIDIT R-3	5	

847

RDT&E BUDGET ITEM JU		FICATION	ON SHE	STIFICATION SHEET (R-2 Exhibit)	Exhibit			DATE <b>Fel</b>	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE N. 060 Dev	PENUMBER AND TITLE 0604802A Weapons And Wunitions Engineering Development	ritle Veapons it	And Kur	litions Er	ngineerin		PROJECT <b>D531</b>
COST (in Thousands)	FY 1904 Actual	FY 1995 Estimate	FY 1986 Estimate	FY 1997 Estimate	FY 1988 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DS31 10SMM HOWITZER AMMUNITION IMPROVEMENT	5015	3128	3619	0	0	0	О	0	0	28610
C. Other Program Funding Summary;									٤	Total
Procurement Ammunition, Army, Cartridge, Arty, 105mm DPICM, XM915, SSN E53500	FY 1994 0	EX 1995	EY 1996	EY 1997 20000	EY 1998 20000	EY 1992.	EY 2000 5000	EY 2001 15217	Cont'd	Cont. d
D. Schedule Profile			1	i		:			:	
	FY 1994 2	4 W	7	FY 1995 2 3	<b>-</b>	FY 1996 2	δ ε 4	****	FY 1997 2 3	4
Contracts to provide DT&E hardware	ı	×				1		1		
XM234 S-D fuze multi-phase contract		*								
INCICENT.  LAP of EMD test cartridges at Lone Star			×	u						
In-house performance testing & envelope		×								
studies of AMBO greatage & AMP 12 proj EMD testing with self destruct hardware			×	u						
Evaluation of all design h/w concepts		*		>						
and additional grenade fuzes				•						
LAP of DPICM test cartridges at LSAAP FMD testing: includes HE airburst				×						
reliability; HE Sequential Environmental Safety Reliability; SD fuze eval; other				<b>!</b>						
tests XM80/XM24 performance tests; degradation effects				×						
			Pare 11 of 18 Pares	8 Pages				EXHIDE R-2	2	
			476							5

Item 97

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Ext	libit)	DATE February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604802A Weap Development	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	Engineering
FY 1994	FY 1995	FY 1996	FY 1997
AFATDS fire control software support program, USAFAS/ARDEC DT&E: safety phase Engineering eval of performance LAP of remainder DT&E test cartridges DT&E Testing Follow up on tests, eval test results, prepare TDP for MS III. Finalize reports.	· ×		
• Denotes completed			
1.9%6.1	rage 17.01.10 rages		EXHIBIT K-Z

RDT	RDT&E PROGRAM ELEME	RAM ELE	MENT/PR	<b>JECT C</b>	OST BE	EAKDO	NT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	g And Manu	facturing [	Jevelopment		PE NUMBER AND TITLE 0604802A Wea Development	AND TITLE  2A Weap  ment	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	funitions	Engineer		PROJECT <b>D531</b>
A. Project Cost Breakdown	<b>eakdown</b>										
Program engineering and management support	g and manageme	ent support		FY 1994	Zi	EX 1995 1310	EX 1996	FY 1997			
Contract engineering support	g support	•		3872		783	780	0	_		
Test and evaluation support SBIR/STTR	support			808 2		& &	1870				
Total				\$615		3128	3619	•			
B. Budget Acquisition History and Planning Information	tion History and	i Planning Inf	ormation								
Performing Organizations	izations										
Contractor or	Contract	,									
Covernment Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
TACOLIA DEVELOPMENT OF ANIMATIONS	ent Organization	<b>10</b> 10 10 10 10 10 10 10 10 10 10 10 10 10	2033					Š	•	•	
Chamberlain	Open /CDIT	SED 03	1366	1300	1663	1361	1514	ŝ		0	5527
SAAP . Scranton			3	3	3	<b>P</b>	>	>	>	5	0071
Amron Corp.;	Open/CPIF	SEP 93	290	280	290	25	0	0	0	0	618
KDI Precision	Open/CPIF	SEP 93	3914	3914	1250	2664	0	0	0	0	3914
Products, Cincinnati, OH											
Olin, East Alton,	Open/FP	SEP 93	117	1117	117	0	0	0	0	0	1117
Norris Industries,	Cpre:/CPIF	SEP 93	371	371	371	150	0	0	0	0	521
Dayron Corp., Orlando, FL	Open/FP	SEP 94	238	238	0	156	82	0	0	0	238
LSAAP	FP/Allot	JUL 94	1792	1792	0	372	640	780	0	0	1792
				Page	Page 13 of 18 Pages	çs			Exhibit R-3	<b>-</b> -3	
					850						Item 97

RDT&E	PROG	RDT&E PROGRAM ELEME		OJECT (	COST BE	<b>EAKDO</b>	NT/PROJECT COST BREAKDOWN (R-3)		DATE Fe	February 1995	395
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	nd Manul	facturing (	Development		PE NUMBER AND TITLE 0604802A Weal Development	t AND TITLE  2A Weap  ment	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	funitions	Engineeri	gu	
Contractor or Cor Government Me Performing or P	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	EY 1995	EY 1996	EY 1997	Budget to Complete	Total
Support and Management Organizations SBIR/STTR Test and Evaluation Organizations TECOM VPG AZ	ent Organiz ganizations		1193	1103	Ş	417	99 8	0 081	0 0	• •	3193
Government Furnished Property: None Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Property: oment nagement tion	None			4741 80 4821	5264 417 5681	2236 66 826 3128	1749	•	•	13990 66 3193
				Page	Page 14 of 18 Pages	.es			Exhibit R-3	1-3	

RDT&E BUDGET ITEM JU		FICATION	ON SHE	ET (R-2	STIFICATION SHEET (R-2 Exhibit)	(1)		DATE FeI	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604802A Weal Development	ritle Veapons it	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	litions Ei	ngineerin		PROJECT D613
COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1998 Estimate	FY 1997 Estimate	FY 1906 Estimate	FY 1980 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coef to Complete	Total Cost
DE13 MORTAR SYSTEMS	2306	11166	0	0	0	0	0	0	0	72390
C. Other Program Funding Summary									٤	1
Progressed Amminition Army	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Somo	3
SSN E25504, XM929	4784	21546	47704	10073	21285	19692	18525	21746	Continuing	Continuing
SSN E25507, XM931	0	0	18768	16061	13622	13168	12085	14714	Continuing	Continue
Other Procurement, Army, 2: SSN K99200	• •	0	8019	4125	3833	0	43771	0	00	39949
(Compri)										
I'. Schedule Profile	1007		Ŀ	2001		70.	×		EV 1003	
-	2 3	•	-	ri 1755 2 3	-	7 1 133 2	<b>₹</b>		ri 199/ 2 3	<b>-</b>
Dev software to provide ballistic data for		×							!	
all existing & planned mortar munitions		į								
Eval & select live platform for all IMBCs  Eval & analyze mat'l romas to achieve		×	×							
mortar sys mobility & accuracy remas			:							
Develop, test & TC a 120mm mortar Full Researe Training Cartridge						×				
Complete development of IMBC software					×					
Conduct DT/OT of the IMBC Type classify the IMBC					×	×				
*Denotes completed.										
			Page 15 of 18 Pages	8 Pores				Exhibit R-2	2	
			852							Item 97

RDT8	RDT&E PROGRAM ELEME	ZAM ELE	MENT/PROJECT COST BREAKDOWN (R-3)	JECT C	OST BR	EAKDO	WN (R-	<b>a</b>	DATE	February 100K	No.
BUDGET ACTIVITY  5 - Engineering And Manufacturing Deve	And Manuf	acturing D	evelopment		PE NUMBER AND TITLE 0604802A Weal Development	AND TITLE  A Weap  ment	ons And I	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	Engineer		PROJECT D613
A. Project Cost Breakdown	akdown						ì				
Product development				5327	ᅿ	4803	0	0 0	7 0		
Management/engineering Support Test and evaluation	ring Support			3638		3202 2926	00		00		
SBIR/STTR Total				9052		234 11165	00				
B. Budget Acquisition History and Planning Information	on History and	Planning Info	prmation								
Performing Organizations	ations										
Contractor or Government	Contract Method/Type	Award or	Performing	Project	Total						
Performing Activity	or Funding Vehicle	Obligation Date	Activity EAC	Office	Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Product Development Organizations	it Organization	-	Ì			1					
Pocal Industries	SS/CPIF	2095	3344	3344	0	3344	0	0	0	0	3344
Miltope:	CFP.	1095	310	310	0	310	0	0	0	0	310
Hope Hull, Al	•				•		•	•	,	•	
AKUEC MTA:	SS/FP	\$ \$	351	351	<b>-</b> -	351	<b>-</b>	<b>5</b> C	<b>-</b>	<b>&gt;</b> c	351
Huntsville, AL		Y			•	3	•	•	•	•	100
Mitre:	SS/FP	3Q94	78	<b>2</b> /8	0	78					78
Tinton Falls, NJ	9	300	0071	7071	c	c		•	•	•	001.
Di. o Di. of America	4 4		0941	00 <del>1</del>	•	,	096			> 0	1480
Crine Army Denot	¥ A		360	95.5		<b>-</b>	8 5		> <	<b>&gt;</b> <	35.
Diehl Gmbh: GE	S. S.	3095	213	213	0	0	213	0	· c	<b>,</b> c	213
Martin Marietta	C/FP	3095	193	193	0	0	193	0	0	0	193
Ferrulmatic: NJ	CFP	3095	<b>604</b>	<b>604</b>	0	0	909	0	0	0	<b>60</b>
IMBC: ARDEC	WR	1095	603	603	0	0	603	0	0	0	603
				Page 1	Page 16 of 18 Pages	Sã			Exhibit R-3	R-3	
					***						Item 97

Particle   Particle	RDT&E	&E PROGE	SAM ELE	PROGRAM ELEMENT/PROJECT	JECT C	SOST BE	REAKDO	COST BREAKDOWN (R-3)	2	DATE	February 1995	966
Development	BUDGET ACTIVITY 5 - Engineering	) And Manuf	acturing [	)evelopment		PE NUMBER 060480;	ZA Weap	ons And	Munitions	Engineer		PROJECT <b>D613</b>
Management Organization						Develor	oment					
Table   Method/Type Activity Office   Priori   Method/Type   Priori   Pri	Contractor or	Contract										
Particle   Particle	Government	Method/Type	Award or	<b>Performing</b>	Project	Total						
National Particle   Data	Performing Activity	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
ortans, Management Organizations Allor 1094 4 433 433 0 433 0 0 0 0 0 0  MR Allor 1094 2716 2716 0 2716 0 0 0 0 0 0  MR 1094 76 76 0 2716 0 0 0 0 0 0  MR 1094 413 413 0 413 0 0 0 0 0 0  Act Copp. SSFP 3094 413 413 0 120 0 0 0 0 0  COM WR 1095 668 668 0 0 668 0 0 0 0  COM WR 1095 133 133 133 0 0 133 0 0 0  MR 2095 133 133 0 0 0 133 0 0 0  MR 2095 133 133 0 0 0 130 0 0 0  MR 2095 139 139 0 0 1700 0 0 0 0  MR 2095 139 130 130 0 0 0 1700 0 0 0  MR 2095 15 130 150 0 0 0 0 0 0  MR 2095 15 15 15 0 0 0 0 0 0  MR 2095 15 15 15 0 0 0 0 0 0  MR 2095 15 15 15 0 0 0 0 0 0  MR 2095 15 15 15 0 0 0 0 0 0  MR 2095 15 15 0 0 0 0 0 0 0  MR 2095 15 15 0 0 0 0 0 0 0  MR 2095 15 15 0 0 0 0 0 0 0 0  MR 2095 15 15 0 0 0 0 0 0 0 0  MR 2095 15 15 0 0 0 0 0 0 0 0 0  MR 2095 15 0 0 0 0 0 0 0 0 0 0 0 0  MR 2095 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0  MR 2095 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Vehicle	Date	EAC	EAC	EX 1994	EY 1994	FY 1995	FY 19%	FY 1997	Complete	Program
March   1094   433   433   633   69   69   69   60   60   60   60   60	Support and Mana	rement Organiza	ations									
EC WR 1094 2716 2716 0 2716 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PM Mortars,	Allot	1094	433	433	0	433	0	0	0	0	433
EC	Picatinny, NJ											
NK   NK   1094   76   76   76   76   70   70   70   70	ARDEC	W.R	1094	2716	2716	0	2716	0	0	0	0	2716
SS/FP   3Q94   413   413   6   413   6   6   6   6   6   6   6   6   6	CECOM	WR	1094	92	92	0	76	0	0	0	0	76
Actington, NJ SSFP 3Q94 413 413 0 413 0 0 0 0 0 Artington, NJ SSFP 3Q94 120 120 0 120 0 0 0 0 Availle, TN SSFP 3Q94 120 120 0 120 0 0 0 0 0 SEC WR 1Q95 668 668 0 0 668 0 0 0 0 SEC WR 2Q95 133 133 133 0 0 133 0 0 0 SM WR 2Q95 133 133 0 0 133 0 0 0 0 0 SFT ARDEC WR 3Q95 130 130 0 0 133 0 0 0 0 0 SFT ARDEC WR 2Q95 130 130 0 0 0 133 0 0 0 0 0 SFT ARDEC WR 2Q95 130 130 0 0 0 130 0 0 0 0 0 SFT ARDEC WR 2Q95 130 130 0 0 0 130 0 0 0 0 0 0 0 SFT ARDEC WR 2Q95 130 130 0 0 0 0 0 0 0 0 0 0 0 0 SFT ARDEC WR 2Q95 130 130 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ft Monmouth, NJ											
Artilington, NJ SSFP Artilington, NJ SSFP SQSP SQSP SQSP SQSP SQSP SQSP SQSP	Camber Corp.	SS/FP	3094	413	413	0	413	0	0	0	0	413
Naville, TN         SSFP         3Q94         120         120         0         0         0         0         0         0         0         0         0         0         0         0         0         0         avxille, TN           FM Mrs         Allot         1Q95         466         466         0         0         466         0 <td< td=""><td>Mt. Arlington, NJ</td><td></td><td>•</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Mt. Arlington, NJ		•									
Alloc   1Q95   466   466   0   0   466   0   0   0   0   0   0   0   0   0	SET:	SS/FP	30,50	120	120	0	120	0	0	0	0	120
Alloc   1Q95   466   466   0   0   466   0   0   0   468   0   0   0   0   468   0   0   0   648   0   0   0   648   0   0   0   648   0   0   0   648   0   0   0   648   0   0   0   0   0   0   0   0   0	Knoxville, TN		,									
WR         1Q95         668         668         0         0         668         0         0         668         0         0         0         235         0	IMBC: PM Mtrs	Allor	1095	994	994	0	0	466	0	0	C	466
WR         1Q95         233         235         0         0         235         0         0         0         235         0         0         0         133         0         0         0         133         0         0         0         0         0         0         1700         0	ARDEC	WR	1095	899	899	0	0	899	0	0	· C	895
WR         2095         133         133         0         0         133         0         0         0         1           WR         3Q95         1700         1700         0         0         1700         0         0         1           WR         2Q95         72         72         72         0         72         0         0         0         0           FG         WR         3Q95         1800         1800         0         0         0         0         0         0           PG         WR         4Q95         673         673         0         0         0         0         0         0           PG         WR         4Q95         300         300         0         0         0         0         0         0         0           PG         WR         4Q95         300         300         0         0         0         0         0         0         0           PG         WR         4Q95         300         300         0         0         0         0         0         0         0           PG         WR         4Q95         300	AMCCOM	WR	10,85	235	235	0	0	235	0	0	, <b>c</b>	235
WR         3Q95         1700         1700         0         1700         0         0         1700         0         0         1700         0         0         1700         0         0         1700         0         0         0         1700         0	CECOM	WR	2095	133	133	•	0	133	0	0	0	133
### Organizations    MR   2Q95   15   15   0   15   0   0   0   0   0      MR   2Q95   72   72   0   72   0   0   0   0   0      MR   2Q95   1800   1800   0   0   183   0   0   0   0   18    WR   2Q95   153   153   0   0   0   0   0   0   0   0      WR   2Q95   153   153   0   0   0   0   0   0   0   0      WR   2Q95   153   153   0   0   0   0   0   0   0   0      WR   4Q95   300   300   0   0   300   0   0   0	M931: ARDEC	WR	3095	1700	1700	0	0	1700	0	0	· c	1700
Marked Property: None   15   15   15   15   15   15   15   1	SBIR/STTR		,			0	0	234	0	0	0	234
95 15 15 0 15 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Test and Evaluation	a Organizations									•	
95 72 72 0 72 0 0 0 0 0 188 95 1800 1800 0 0 183 0 0 0 18 95 673 673 0 0 673 0 0 0 6 95 300 300 0 0 300 0 0 0 0 0	TECOM:	W.R	2095	15	15	0	15	0	0	0	0	1.5
95 72 72 0 72 0 0 0 0 0 0 1800 95 1800 1800 0 0 1800 0 0 0 18 95 673 673 0 0 673 0 0 0 6 95 673 0 0 0 673 0 0 0 6 96 973 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WSMR, NM		•									
95 1800 1800 0 0 1800 0 0 18 95 153 153 0 0 0 153 0 0 0 1 95 673 673 0 0 0 673 0 0 0 6 95 300 300 0 0 300 0 0 0 0 0 0 0 0 0 0 0	CSTA: APG, MD	WR	2095	72	27	0	72	0	0	0		72
95 153 153 0 0 0 153 0 0 0 1 95 673 673 0 0 0 673 0 0 0 6 95 300 300 0 0 300 0 0 0 0 0 0	M930: Dugway PG	WR	3095	1800	1800	0	0	1800	0	0	0	1800
95 673 673 0 0 673 0 0 0 6 95 300 300 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	IMBC: WSMR	WR	2095	153	153	0	0	153	0	0	0	153
95 300 300 0 0 0 0 0 0 0 0 0 P. Page 17 of 18 Pages Exhibit R-3	FT Hood, TX	WR	4095	673	673	0	0	673	0	0	· c	673
Page 17 of 18 Pages Exhibit R-3	M931:CSTA, APG	WR	4095	300	300	0	0	300	0	0	C	00,
Page 17 of 18 Pages												
Exhibit R-3	Government Furnis	shed Property:	None									
					Poge	17 of 18 Pag	2			n chihit	7	
					1 DXC	W 1 57 10 / 1	23				2	

Item 97

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3)		DATE Fe	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604802A Weal Development	PENUMBER AND TITLE 0604802A Weapons And Munitions Engineering Development	ns And M	unitions	Engineeri		PROJECT <b>D613</b>
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Prior to EY 1994	EY 1994 3207 3758 87 9052	EY 1995 4803 3436 2926 11165	EV 1996	EY 1997	Budget to Complete	To't Program 10010 7194 3013 20217
Pag	Page 18 of 18 Pages	ş			Exhibit R-3	ဇ္	

	RDT&E BUDGET ITEM	-	FIFICAT	HS NOI	IEET (R	JUSTIFICATION SHEET (R-2 Exhibit)	<del>1</del>		DATE Fel	February 1995	95
800G	BUDGET ACTIVITY 5 - Engineering And Manufacturing Deve	evelopment	ent	PE NU 060 Enç	PE NUMBER AND TITLE 0604804A Logi Engineering De	E NUMBER AND TITLE 0604804A Logistics And E Engineering Development	FENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	ineer Eq	ulpment		
	COST (in Thousands)	FY 1994 Actual	FY 1986 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1900 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	19622	21970	20756	19150	16722	12463	7063	7681	Continuing	Continuing
DH01	Combat Engineer Equipment Engineering Development	CZ9#	2460	1000	10069	7980	4786	100	100	Continuing	Continuing
0H14	Logistics Support Equipment Engineering Development	2867	9815	1362	06	16	8	<b>6</b>	90,	Continuing	Continuing
D130	General Support Equipment Engineering Development	2862	1567	1646	1734	2202	240	2190	2210	Continuing	Continuing
DL41	Fuels Handling Equipment Engineering Development	1424	1467	1220	1070	1183	1220	<u>*</u>	1197	Continuing	Continuing
טרש	Camouflage System Engineering Development	0	0	1280	988	<b>38</b>	<b>388</b>	200	80#	Continuing	Continuing
2	Engine Driven Generators Engineering Development	1508	1980	ecc.	286	270	286	719	772	Continuing	Continuing
0.200	Airdrop Equipment Engineering Development	4462	1467	1463	1498	1502	1507	1548	1546	Continuing	Continuing
0428	Tactical Rigid Wall Shelters Engineering Development	5043	3581	2670	3377	2467	1134	1286	1297	Continuing	Continuing
D46	Marine Oriented Logietics Equipment Engineering Development	0	2794	346	0	0	0	0	0	Continuing	Continuing
V W	A. Mission Description and Budget Item Justification: support and combat service support equipment.		program su	pports engin	ering and	manufecturi	This program supports engineering and manufacturing development (EMD) of new and advanced combat	kent (EMD)	of new and a	advanced co	nbat

Project DH01 - Combat Engineer Equipment-Engineering Development: This project supports the development and transition to procurement of military tactical bridging for wet and dry bridging requirements such as the Improved Common Bridge Transporter (ICBT), the Improved Ribbon Bridge (IRB) Bays, the Military Load Class (MLC) 70 Ton version of the Armored Vehicle Launched Bridge (AVLB 70), the Heavy Dry Support Bridge (HDSB), and the testing of the MLC 96 Ton upgrade

Page 1 of 39 Pages

Exhibit R-2

Item 98

856

## February 1995 DATE RDT&E ISUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE BUDGET ACTIVIT

0604804A Logistics And Engineer Equipment **Engineering Development** 5 - Engineering And Manufacturing Development

development of low cost and low observable camouflage systems for suppression of visual, near-infrared, thermal, radar, and acoustic signatures of high mobile and semifor the Medium Girder Bridge (MGB). All bridging work is in support of the increased MLC requirements for the M1 tank. In FY94 this project also supports the mobile weapons systems. Camouflage systems development is restructured to Project DL42 in FY 96. This project also provides for the non-developmental item acquisition of the Deployable Universal Combat Earthmover (DEUCE) and market investigations of other engineer construction equipment.

## FY 1994 Accomplishments:

- Conducted Preplanned Product Improvement (P31) for general purpose camouflage with enhanced thermal radar and visual signature reduction (465)
  - Completed testing of AVLB 70 (760)
- Type classified the AVLB 70 and transitioned to production (499)
- Investigated the Medium Girder Bridge (MGB) for military load class 96 capability (350)
- Conducted Production Qualification Test (PQT)/Operational Test (OT) and Milestone III Review for Aviation and General Purpose Ultra Light Camouflage Net (ULCANS) and Preproduction Qualification Test (PPQT)/OT/Milestone Review for High Mobility Camouflage (HMC) for M1 tank and M2 Bradley (480)
  - Acquired four upgraded prototype ICBTs and initiate PQT (661)
- Conducted Milestone I/II Review and pre-award contract activities for the DEUCE (1408)

## FY 1995 Planned Program:

- Conduct Source Selection Board for DEUCE contract (200)
  - Procure preproduction prototypes for DEUCE (824)
- Conduct testing of preproduction prototypes for DEUCE (357)
  - Complete ICBT PQT. (275)
    - Complete ICBT OT. (300)
- Initiate and conduct ICBT Milestone II review. (453)
  - Adjustment due to SBIR/STTR. (51)

## FY 1996 Planned Program:

- Conduct Source Selection Board for HDSB (640)
- Conduct Milestone II Review for HDSB (412)
- Award HDSB Engineering Manufacturing Development (EMD) contract (7441)
  - Release Request for Proposal for IRB bays (398)
- Conduct Milestone III for ICBT (300)
- Complete preproduction qualification test for DEUCE (300)
  - Conduct Milestone III IPR for IDEUCE (100)

Exhibit R-2

Item 98

Page 2 of 39 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)	DATE February 1995
	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	quipment
<ul> <li>Conduct market investigation for construction equipment (100)</li> </ul>		

- Fabricate HDSB EMD prototype #1 (6209)
- Conduct Contractor Testing of HDSB EMD prototype (2086)
  - Prepare for award of IRB bays RD/TE contract (380)
    - Develop design for IRB bays (1314)
- Conduct market investigation for construction equipment (100)

HDSB - Competitive RDTE followed by procurement. DEUCE - Competitive procurement of integrated NDI. Acquisition Strategy: ICBT - Competitive RDTE followed by procurement.

(U) Project DH14 - Logistics Support Equipment Development: Develops and transitions to procurement a series of Material Handling Equipment (MHE) items.

## FY 1994 Accomplishments:

- Completed Purchase Description (477)
- Released Request for Proposal for ATLAS (423)
- Conducted Special-In-Process Review for ATLAS (70)
  - Approved ATLAS Source Selection Plan (30)
- Supported delivery of Improved Ribbon Bridge transporters in DH01 for testing (1607)

## FY 1995 Planned Program:

- Conduct Source Selection Board for ATLAS (642)
- Award ATLAS contract and fabricate ATLAS Preproduction Qualification Test (PPQT) vehicles (3688)
  - Develop ATLAS logistics (885)
- Initiate ATLAS PPQT testing (1261)
- Adjustment due to SBIR/STTR. (139)

## FY 1996 Planned Program:

- Complete Preproduction Qualification Testing of the ATLAS (1008)
  - Complete ATLAS logistics development (54)

Page 3 of 39 Pages

UNCLASSIFIED

÷

RDT&E BUDGET ITEM JUSTIFICATION	JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	luipment
<ul> <li>Conduct ATLAS Milestone III IPR (200)</li> <li>Conduct market investigations of material handling equipment (100)</li> </ul>		
<ul> <li>FY 1997 Planned Program:</li> <li>Conduct market investigations for the Container Cargo Retriever (CCR) (25)</li> <li>Conduct market investigations for warehouse Material Handling Equipment (MHE) (25)</li> <li>Conduct market investigations for other general Material Handling Equipment (40)</li> </ul>	AHE) (25) : (40)	
Acquisition Strategy: ATLAS - Competitive procurement of integrated NDI. CCR - P 3 I improvements to ATLAS.  MHE - Competitive procurements for miscellaneous MHE.		
Project DL39 - General Support Equipment Engineering Development: Develop and transition to procurement water purification equipment, maintenance equipment and environmental control units (ECU) that do not use ozone depleting refrigerants.	op and transition to procurement water purification ecs.	luipment, maintenance equipment
FY 1994 Accomplishments:  Completed evaluation of NBC protective covers for 600 gallon per hour (GPH) Reverse Osmosis Water Purification Units (ROWPU). (100)  Performed Cost and Operational Effectiveness Analysis for NBC protection of 3000 GPH ROWPU. (150)  Initiated final design of Modular Collective Protective Equipment for 3000 GPH ROWPU. (50)  Completed Technical Data Package and implementation procedures for cold weather kit for the 600 GPH ROWPU. (75)  Initiated evaluation of cold weather protection for storage and distribution equipment. (151)  Initiated evaluation of candidate lightweight water purifiers (LWP). (221)  Prepared program management documentation for LWP. (100)  Completed standardization of chemicals and evaluation of ocean intake and direct drive systems and improvements to the family of water supply equipment. (863)  Completed fabrication of four (4) production prototypes of the Heavy Contact Maintenance Truck (CMT) (200)  Completed test of the CMT (130)  Completed Technical Data Package for the CMT (642)	Reverse Osmosis Water 3000 GPH ROWPU. (150) H ROWPU. (50) Feather kit ipment. (151) Maintenance Truck (CMT) (200)	
Pare	Page 4 of 39 Pages	Exhibit R-2

859

RDT&E BUDGET ITEM JUSTIFICATION	USTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	uipment
<ul> <li>Complete testing of NBC protective covers for 3000 GPH ROWPU and incorporate into existing Technical Data Packages (TDPs) and manuals. (115)</li> <li>Complete winterization of water storage and distribution equipment and incorporate improvements into TDPs and manuals. (283)</li> <li>Continue evaluation of candidate lightweight water purifiers. (201)</li> <li>Prepare contract package for prototype of lightweight water purifier. (50)</li> <li>Conduct Milestone I/II In Process Review for High Capacity Purifier. (300)</li> <li>Initiate contract package for design and fabrication of prototype High Capacity Purifiers. (150)</li> <li>Perform trade-off analysis of high Capacity Purifier Subsystems. (357)</li> <li>Complete Market Investigation of Packaged Water System. (100)</li> <li>Adjustment due to SBIR/STTR. (31)</li> </ul>	orate into existing porate improvements  Purifiers. (150)	
FY 1996 Planaed Program:  Conduct tests on 36K British Thermal Units per Hour (BTUH) Environmental Control Units (ECU) prototypes. (90)  Award contract for design/fabrication of prototype Lightweight Water Purifier. (200)  Conduct Pre Production Qualification Testing of Lightweight Water Purifier. (100)  Award contract for design/fabrication of prototype High Capacity Purifier. (1000)  Conduct Milestone I/II in Process Review for Packaged Water System. (259)	Control Units (ECU) prototypes. (90) (200) (100) 00)	
<ul> <li>Prepare data package for improved ECU procurement. (178)</li> <li>Conduct Initial Operational Test and Evaluation of the Lightweight Water Purifier (LWP). (200)</li> <li>Hold Milestone III In Process Review to Type Classify Lightweight Water Purifier. (161)</li> <li>Complete fabrication of prototype High Capacity Purifier. (508)</li> <li>Conduct Engineering Testing of High Capacity Purifier. (207)</li> <li>Award contract for design/fabrication of Engineering Development prototype for Packaged Water System. (273)</li> <li>Conduct Milestone II In Process Review for High Capacity Purifier. (207)</li> </ul>	ifier (LWP). (200) fier. (161) or Packaged Water System. (273)	
Acquisition Strategy: - Competitive procurement for all items under this project.  DL41 - Fuels Handling Equipment Engineering Development: Develop and transition to procurement petroleum storage and distribution systems	nsition to procurement petroleum storage and distribut	ion systems.
Pare	Pare 5 of 39 Pares	Exhibit R-2
		1,100

860 UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION S	hibit)	DATE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment	uipment
	Engineering Development	

## FY 1994 Accomplishments:

- Fabricated three Lightweight Arctic Forward Area Refueling Equipment (LAFARE) prototypes. (928)
  - Completed component testing of LAFARE (246)
- Conducted logistics demonstration (Part I) of LAFARE (200)
  - Continued long term exposure testing of tank fabrics. (50)

## FY 1995 Planned Program:

- Conduct TT/IOT&E, logistics demonstration, and physical configuration audit for LAFARE. (950)
  - Conduct Milestone III type classification for LAFARE. (175)
- Conduct Milestone I/II IPR for the Helicopter Extended-Range Refueling System (HERRS) (157)
  - Prepare statement of work for design and testing of the HERRS prototype. (93)
    - Continue long term exposure testing of tank fabrics. (50)
      - Adjustment due to SBIR/STTR. (28)

## FY 1996 Planned Program:

- Award HERRS EMD contract (120)
- Design and fabricate HERRS initial prototypes. (750)
  - Initiate HERRS component testing. (200)
- Prepare program management documentation for bulk fuel storage (BFS). (150)

## FY 1997 Planned Program:

- Complete HERRS component testing. (150)
- Conduct system test of HERRS. (350)
- Fabricate final HERRS prototype. (400) Conduct Milestone VII in process review for the BFS. (170)

Acquisition Strategy: - Competitive procurement for all items under this project.

Project DLA2 - Camouflage System Engineering Development: Project DLA2, which is restructured in FY 96 from DH01, provides for development and transition to procurement low cost low observable systems for suppression of visual, near-infrared, thermal, radar, and acoustic signatures of highly mobile and semi-mobile weapon

FY 1996 Planned Program:

Page 6 of 39 Pages

Exhibit R-2

### February 1995 0604804A Logistics And Engineer Equipment DATE **Engineering Development** RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 5 - Engineering And Manufacturing Development BUDGET ACTIVIT

- Develop desert Ultralightweight Camouflage Screening System (ULCANS) (800)
- Develop Multispectral Camouflage System-Mobile Equipment (MSCS-ME) for selected Army assets (490)

## FY 1997 Planned Program:

- Develop snow ULCANS (300)
- Incorporate Electrol Optic (EO) signature enhancements in ULCANS and MSCS-ME (695)

Project D194 - Engine Driven Generators Engineering Development: Develop and transition to procurement a series of diesel engine driven generator sets/auxiliary power units and provide continual modernization of fielded sets in order to meet federally mandated environmental statutes with reduced weight and size and reduced thermal signatures.

## FY 1994 Accomplishments:

- Awarded multiple development contracts for fabrication/testing for a 5 kW 28VDC auxiliary power unit (APU). (1446)
  - Completed the test phase of Foreign Comparative Test program for LT 3 kW program. (10)
    - Completed cold weather starting kit program for Tactical Quiet Generator (TQG) sets. (50)

## FY 1995 Planned Program:

- Complete design and down-select 5 kW 28V DC APU (1574)
  - Initiate testing 5kW 28 VDC APU. (383)
    - Adjustment due to SBIR/STTR. (32)

## FY 1996 Planned Program:

- Begin fabrication of 5 kW 28VDC APU Production Qualification Test (PQT) models. (268)
  - Begin testing of 5 kW 28VDC APU PQT models. (270)
- Complete fabrication of 5 kW 28 VDC PQT Models. (270)
- Begin development of 3 kW Tactical Quiet Generator (TQG). (25)

## FY 1997 Planned Program:

- Complete testing of 5 kW 28VDC APU PQT models. (150)
- Complete preparation of formal program review of 5 kW 28VDC APU. (149)

Acquisition Strategy: - Competitive procurements of integrated NDI generators and the Preproduction Qualification testing for the generators.

Page 7 of 39 Pages

Exhibit R-2

Item 98

RDT&E BUDGET ITEM JUSTIFICATION S	JUSTIFICATION SHEET (R-2 Exhibit)	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment	
	Engineering Development	

Project D279 - Airdrop Equipment Engineering Development: Develop and transition to procurement cargo parachutes, airdrop containers and associated equipment. Air delivery equipment will enhance mission capabilities by fully using the airdrop capacity of C-5 and C-17 aircraft for resupply and cargo air delivery.

## FY 1994 Accomplishments:

- Completed combined technical/user testing of single unit 60,000 Ibs airdrop system allowing airdrop of combat-ready vehicle/weapon systems. (1680)
- Completed user testing of All Purpose Weapons and Equipment Container (AIRPAC) to assure airborne soldiers are fully combat operational upon landing. (365)
  - Provided support to the USAF C17 aircraft program to ensure that Army personnel and cargo requirements are met. (2417)

## FY 1995 Planned Program:

- Complete combined technical/user testing of linked platforms for 60,000 lbs airdrop system allowing increased lethality and rapid ground assembly of prime mover weapons systems and ammo combinations. (580)
  - Initiate development of Guided Parafoil Aerial System (GPADS)-Light, Rapid Acquisition Program to provide a precision guided offset delivery capability for payloads up to 1500 pounds. (250)
    - Continue support to the airdrop capability portion of the ongoing USAF C17 program. (576)
      - Type classify AIRPAC for transition to procurement and operational use. (50)
        - Adjustment due to SBIR/STTR. (31)

## FY 1996 Planned Program:

- Type classify 60,000 lbs (Single and Linked Platform) to increase lethality of delivered systems. (250)
  - Continue the Army airdrop capability effort directly supporting the USAF C17 program. (498)
    - Conduct technical/user tests of GPADS-Light as part of Rapid Acquisition Program. (745)

## FY 1997 Planned Program:

- Complete and transition to procurement the GPADS-Light capability for precision guided airdrop. (746)
- Award contract for GPADS-Medium to provide precision guided offset delivery capability for payloads up to 20,000 lbs. (750)

Project D429 - Tactical Rigid Wall Shelters Engineering Development: Develop and transition to procurement a series of rigid wall shelters (RWS) with added capabilities and enhanced survivability.

## FY 1994 Accomplishments:

Conducted Pre-Production Test of non-expandable Electro-Magnetic Interference (EMI) shelter prototypes for enhanced EMI security for Division C2 system. (320)

Page 8 of 39 Pages

Exhibit R-2

	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE February 1995
<b>8</b> ℃	BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	uipment
• •	Completed development of Standard Integrated Command Post System (SICPS) 5-ton E-van for mobile C2 systems. (536)  Type classified standard the lightweight multipurpose shelter (LMS) for HMMWV-mounted battlefield systems. (50)	) 5-ton E-van for mobile C2 systems. (536) WV-mounted battlefield systems. (50)	
•	Prepared Technical Data Packages (TDPs) for Modular Extendible Rigid Wall	ar Extendible Rigid Wall Shelter (MERWS) for Corps level medical applications and disaster relief. (439)	is and disaster relief. (439)
•	Fabricated integrated Chemical/Biological Protective Shelter (CBPS) wheeled Battalion Aid Station. (1990)	Shelter (CBPS) wheeled vehicle prototypes and conduct technical testing to provide mobile chemically protection	vide mobile chemically protection
•	SICPS RWS objective	version for the Army Tactical Command and Control System (ATCCS); provides added power and increases	es added power and increases
•	mussion payload. (950) Initiated testing of SICPS tent P31. (283)		
•	Completed Operational Testing (OT) and TC-STD Version 1 SICPS RWS for ATCCS. (475)	ATCCS. (475)	
2	FY 1995 Planaed Program:		
•	Complete testing and conduct Milestone III for non-expandable EMI International Standards Organization (ISO) shelter which will provide 60dB EMI and EMP	mal Standards Organization (ISO) shelter which will	arovide 60dB EMI and EMP
	protection to critical battlefield C4 system. (200)		
• •	Complete technical testing and conduct operational test of version 3 SICPS RWS. (1255) Milestone III for MERWS, completing development. (250)	VS. (1255)	
•	Complete component testing of SICPS P31 tent. (500)		
	Conduct special IPR and award Limited Processessest Contract for CBPS. (250)	6	
•	Design study for ISO P31 Components. (2:10)		
• •	Design ships for LMS upgrade. (250)		
•	Adjustment due to SBIR/STTR. (76)		
•	Type Classify version 3 SICPS RWS. (800)		
٠	Begin test of new technology components (engine, generator, Environmental Control Unit (ECU), regenerative CB filters) for objective SICPS; lighter weight, quieter,	ontrol Unit (ECU), regenerative CB filters) for objecti	ve SICPS; lighter weight, quieter,
	less maintenance. (980)		
• •	Fabricate ISO P31 prototypes. (300) Estricate insuraded I MS mototymes. (290)		
•	Design investigation on CBPS armored vehicle integration, provides mobile medical aid for Heavy Divisions. (500)	edical aid for Heavy Divisions. (500)	
٢.	FV 1997 Plan ned Program: • Conduct t whateal testing of ISO EMI P31 components. (400)		
	Page	Page 9 of 39 Pages	Exhibit R-2

Item 98

UNCLASSIFIED

3

RDT&E BUDGET ITEM JUSTIFICATION	USTIFICATION SHEET (R-2 Exhibit)	TE February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604804A Logistics And Engineer Equipment	oment
	Engineering Development	

- Award R&D contract to develop full integration package for CBPS armored vehicle mobile medical aid station integration. (557)
  - Complete testing TDP and conduct Milestone III for LMS upgrade. (200)
    - Complete testing next generation SICPS components. (500)
- Conduct technical/operational testing of 5th wheel trailer-mounted SCIPS RWS. (1720)

Project D461 - Marine Oriented Logistical Equipment Engineering Development: Develop and transition to procurement watercraft systems needed to perform Logistics Over The Shore (LOTS) operations in support of the Army Strategic Mobility Plan.

FY 1994 Accomplishments: Project not funded in FY 1994.

## FY 1995 Planned Program:

- Test and evaluate the Lighter Amphibian Resupply Cargo-60 Ton (LARC-LX) prototype (932)
  - Manual update data for the LARC-LX prototype (1408)
- Landing Craft Mechanized (LCM-8) to Coastal, Harbor and Inland (CHI) Boat propulsion system and deck arrangement conversion (433)
  - Adjustment due to SBIR/STTR (59)

## FY 1996 Planned Program:

- Development of berthing and propulsion systems for the Floating Crane (278)
  - Development of fendering system for the Pusher Tug (70)

FY 1997 Planned Program: Project not funded in FY 1997

Acquisition strategy: Floating Crane -- Competitive Procurement to performance specification

Pusher Tug -- Competitive Procurement to performance specification

Page 10 of 39 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	FICATION	SHEET (R	-2 Exhibit)		DATE February 1995	
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	ant	PE NUMBER AND TITLE 0604804A Logis Engineering De-	ENUMBER AND TITLE 0604804A Logistics And E Engineering Development	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	Equipment	
B. Program Change Summary						
Previous President's Budget Appropriated Value Adjustments to Appropriated Value (Total PE)  SBIR/STTR decrement (-326)	EV 1994 25519 25519 -3122	EX 1995 21171 21970	EY 1996 12418	EY 1997 10410		
b. Reprogrammings out of PE (-2736) Current Budget Estimate Submission (BES)	22397	21970	20756	19150		· · · · · · · · · · · · · · · · · · ·
	Page	Page 11 of 39 Pages			Exhibit R-2	7
		<b>998</b>			Item	Item 98
	<b>S</b>	UNCLASSIFIED				

RDT&E BUDGET ITEM JI	M JUSTI	FICATION	ON SHE	ET (R-2	USTIFICATION SHEET (R-2 Exhibit)			DATE Fe	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopme	ınt	PE NU 060 Eng	PE NUMBER AND TITLE 0604804A Logi Engineering Der	PE NUMBER AND TITLE 0604804A Logistics And I Engineering Development	And Eng	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	uipment	20	PROJECT <b>DH01</b>
COST (In Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Eathmate	FY 1996 Estimate	FY 1996 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DH01 Combat Engineer Equipment Engineering Development	4623	2460	<b>88</b>	10089	7989	4788	8	6	Continuing	Continuing
C. Other Program Funding Summary										
OPA BA3 Other Surmort Equips at	EY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Total Cost
G82400 Heavy Dry Support Bridge M26800 Improved Common Bridge Transporter M26600 Improved Ribbon Bridge. Int. Bays			3828	4472	4574	4675	10264 4778	10491	96237	41288
M26700 Improved Ribbon Bridge, Ramp Bays Construction Equipment (Various)	17337	9206	21021	10398	3399	17617	35/1 1445 35483	1223 32039	23143 10101 Cont'd	12769 Cont'd
	FY 1994 2 3	4	- 7	FY 1995 2 3	4	FY 1996 2 3	26 ε 4		FY 1997 2 3	4
Milestone 0 IPR for DUECE X* Milestone I/II IPR for DEUCE Release RFP for DEUCE Four prototype ICBT's upgraded,	*	* <b>*</b>								
Contractor tested and delivered.  ICBT Logistic Demo Completed  Commencement of ICBT PQT  Conduct P31 for GP Camoniface		***								
Conduct ULCANS PQT/QT & and Milestone III Review Award DEUCE contract	view	×*	×							
Conduct PPQT Test for DEUCE Conduct ICBT IOT&E				^ ×	×					
			Page 12 of 39 Pages	9 Pages				Exhibit R-2	2	
			867							Item 98

v 1995	PROJECT DH01	3 4	× ×	
DATE February 1995	Equipment	FY 1999	×	Edriba R-2
R-2 Exhibit)	7E NUMBER AND TITLE OGO 4804A Logistics And Engineer Equipment Engineering Development	FY 1996	× ××	
STIFICATION SHEET (R-2 Exhibit)		FY 1995		Page 13 of 72 Pages
RDT&E BUDGET ITEM JU	BUDGET ACTIVITY 5 - Enginsering And Manufacturing Development	FY 1994 1 2 3	Complete preproduction qualification test for DEUCE Conduct Milestone III IPR for DEUCE; Conduct Milestone II Review for HDSB Awd HDSB EMD Contract Conduct Milestone III Review for ICBT Release Request for Proposal for IRB Bays Fabricate HDSB EMD Prototype #1 Conduct contractor testing of HDSB EMD prototype Award IRB bays contract	

RDT&E PROGRAM ELEMENT/PROJECT		ST BREAK	COST BREAKDOWN (R-3)	DATE	E February 1998	1005
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	₩ O III	PE NUMBER AND TITLE 0604804A Logistics And E Engineering Development	jistics And E	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	ment	PROJECT DH01
A. Project Cost Breakdown DH01 DEUCE & Construction Equipment	FY 1994	FY 1995	FV 19%	FV 1997		
Request For Proposal Preparation Test planning and devaluation	218					
Integrated Logistics Spt (ILS)	95 15 15 15 15 15 15 15 15 15 15 15 15 15					
Program Management Support	120	100	80			
Govt Engineering Spt	150	001	200			
Purchase Description Development	200					
Program Cost Estimate (PCE)	<u>8</u> 3					
Protective Leadures Described	07					
Principle radium and Descriptions		46/				
Developmental and Operational Testing	•	307				
Construction Equip Market Investigations	0	0	90	901		
Miscellaneous (SBIR/STTR = 76 in FY 95)	170	<u>20</u>	120			
Subtotal	1408	1407	200	100		
DHOI BRIDGING (HDSB, ICBT & IRB)						
Primary Hardware Develorment	1248	0	6032	7188		
Integrated Logistics Support (ILS)	<del>4</del>	20	901	100		
Technical Data development and data rights	245	201	1820	1157		
Developmental Test and Evaluation	333	550	0	557		
Program Management Support (three programs)	310	222	1093	845		
Miscellancous (SBIR/STTR = 25 in FY 95)	8	99	146	142		
Subtotal	2270	1053	9291	6866		
DHOI CAMOUFLAGE						
Program Management Set	076					
Technical Data Package (TDP) Prevaration	505					
Document Support	2					
Testing	18.5					
Miscellancous	2.					
Subtotal	945					
Grand Total for Project DH01	4623	2460	9691	10089		
	Page 140	Page 14 of 39 Pages		Exh	Exhibit R-3	
	9	03				frem 09
	Ď	609				2

RDT	RDT&E PROGRAM ELEME!	RAM ELE	MENT/PR	NT/PROJECT (	COST B	REAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel	3 And Manul	facturing [	Jevelopment		PE NUMBER 060480. Engine	PE NUMBER AND TITE 0604804A Logis Engineering Deve	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	ingineer E	quipmen		PROJECT <b>DH01</b>
B. Budget Acquisition History and Planning Informati	non History and	Planning Inf	ormation								
Performing Organizations	zations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	organizations	30	0000		;			;	,	!	
Contractor IBD		Ca 55	18399	18399	∢ :			7843	6846	14787	18399
Contractor 15D	Cerr	rep 9/	7517	7517	<b>∀</b> ;			,	1394	1394	2152
MIC-BELVOIR					<b>∢</b> Ż	1394	1053	1200	1192	3634	Cont.'d
Support and Management Organizations NONE	ment Organizat	TWON SHOT				1394	1033	9043	7432		
Test and Evaluation Organizations NONE	Organizations 1	NONE									
Contractor or		Award or	Performing	Project	Total						
Gov't Performing		Obligation	Activity	Office	Prior to					Budget to	Total
Activity Miscellaneous		Date	EAC	EAC	EY 1994	EY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
130		Nov 94	N/A	Ϋ́Z	<b>∀</b> X	150		86			
Contractor TBD	FFP	Mar 95			1 9 9	) )	800	2			
RADIAN INC.	TASK ODR.	Various	<b>V</b> / <b>V</b>	N/A	Y/X	184					
MTC-Belvoir	2	Various	Y/X	٧ <u>/</u> ٧	Y'X	848					
BRTRC	TASK ORD	Various	Y/Z	Y/X	Y/X	580					
VSE	TASK ORD	Various	Y Z	Ϋ́Z	マス	484	150	150	150		Cont.d
TACOM	1095	Various	Y ?	Y/X	Y/Z	145					<del></del>
AICOM	5601	Various	₹ Z	ď į	<b>∢</b> Ż		150	150			
LECOM	\$60!	Various	Y/X	<b>∀</b> Z	<b>∀</b> X	\$39	307	250	207		Cont, d
CSTA	1095	arions	<b>Y</b> X	<b>4</b> X	∢ Ż	191					
ARL	1095	Various	<b>V</b> /N	<b>4</b> /2	<b>Y</b> X	28					
PM-113	\$601	Various	Y/X	<b>4</b> /Z	ΥŻ	140					
Total						3229	1407	648	657		Cont'd
				Page	Page 15 of 39 Pages	es			Exhibit R-3	k-3	
					870						Item 98

RDT&E PROGRAM ELEMENT/PROJECT	T COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	7 9
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER 060480 Engine	PE NUMBER AND TITLE 0604804A Logistics And F Enginearing Development	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engine-aring Development	ngineer E	duipmen	t	
Subtotal Product Development Subtotal Support and Management	Total Prior to EY 1924 Cont'd 0	FY 1994 1394	EY 1995 1053	EY 1996 9043	FY 1997 9432	Budget to Complete Cont'd 0	Total Program Cont'd
Subtotal Test and Evaluation   Miscellaneous   Total Project	Cont'd Cont'd	3229 4623	1407	648 9691	687 10089	0 Cont'd	Cont'd
Government Furnished Property NONE							
	rage 10 of 39 rages	es			Exhibit R-3	-3	

871

RDT&E BUDGET ITEM JU		FICATION	ON SHE	ET (R-2	STIFICATION SHEET (R-2 Exhibit)			DATE Fel	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NI 060 Eng	PE NUMBER AND TITLE 0604804A Logi Engineering De	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	And Eng ment	ineer Eq	uipment	<u> </u>	PROJECT DH14
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1987 Estimate	FY 1986 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
DH14 Logistics Support Equipment Engineering Development	7992	5198	1362	8	22	\$	<b>6</b>	100	Continuing	Continuing
C. Other Program Funding Summery									Ę	F - 1
	FY 1994	EY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Sol
OFA, BA3, Other Support Equipment M41800 All Terrain Lifting Articulating System ML5365 Items Less Than \$2.0M (MHE)	5816	4694	14403 2843	165 <b>89</b> 2772	1827	1826	1988	1989	Cont'd	Cont'd
D. Schedule Profile	FY 1994	•	i.,	FY 1995	•	FY 19%		•	7 199	•
_	2	*	7	7	4	7	4	-	2	4
Contract Award (ATLAS) Prototype Fabrication (ATLAS) Prototype delivery (ATLAS) Prototype delivery (ATLAS) Pre Production Qualification Test Initiated (ATLAS) Type Classification Generic (ATLAS) 1st Production Quality call up (ATLAS) Conduct Market Investigations for MHE	$\hat{\omega}$			×	×× ×		×			×
			Page 17 of 39 Pages	9 Pages				Exhibit R-2	8	<del> </del>
										1,00

RDT	RDT&E PROGRAM ELEMENT/PROJECT	RAM ELE	MENT/PR		COST BREAKDOWN (R-3)	EAKDO	NN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	And Manul	facturing D	evelopmer	ı,	PE NUMBER AND TITLE 0604804A Logi Engineering De	E NUMBER AND TITLE 0604804A Logistics And I Engineering Development	cs And Er lopment	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	quipment	g O	PROJECT DH14
A. Project Cost Breakdown	akdown			FY 1994	FY 1995		FY 1996	FY 1997			
Government Engineering and Other Support Primary Hardware Development	ring and Other Sevelopment	Support		1257	2	910 2639					
Developmental Test and Evaluation	ind Evaluation			400	7	2539	1008				
Program Management Support Miscellaneous	nt Support			130		/70	100	8			
Total				2657	9	6615	1362	8			
B. Budget Acquisition History and Planning Information	ion History and	Planning Info	rmation								
Performing Organizations	zations										
Contractor or	Contract			1	ŀ						
Government	Method/lype or Funding	Award or Obligation	renorming Activity		Prior to					Budget to	Total
Activity	Vehicle		EAC	EAC	FY 1994	FY 1994	<b>EY 1995</b>	FY 1996	FY 1997	Complete	Program
Product Development Organizations	t Organizations			,							
Contractor TBD	CPFF	Mar 95	3175	3175			3175				
Support and Management Organizations: NONE	ment Organizat	ions: NONE									
Test and Evaluation Organizations:	Organizations:	Varions	Z			420	2306	1069			
Miscellaneous											
TARDEC	MIPR	Varions	<b>Y</b> X			947	820	118	2	Cont'd	Cont.d
BRDEC	&	Various	Y V			882	1	,	•		
PM CE/MHE	2	Various	<b>Y</b>			175	175	175	70	Contra	
Contractors	CPIF	Various	7			067	139				
TOTAL	4					2237	6615	1362	8		
				ć		ļ			מילינת מילינת מילינת	ç	
				rage	rage 10 of 39 rages	S			EXILIBITE		
					873						Item 98

RDT&E PROGRAM ELEMENT/PROJECT	T COST BREAKDOWN (R-3)	EAKDO	WN (R-3		DATE F	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604804A Logi Engineering De	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	ics And E	ngineer E	quipment		
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Miscellaneous Total Project	Total Prior to EY 1994 Cont'd Cont'd Cont'd Cont'd Cont'd	FY 1994 0 0 420 2237 2657	FY 1995 3175 0 2306 1134 6615	FY 1996 1069 293 1362	FY 1997	Budget to Complete Cont'd Cont'd Cont'd Cont'd Cont'd Cont'd	Total Program Cont'd Cont'd Cont'd Cont'd Cont'd
Government Furnished Property: None	Page 19 of 39 Pages	Ş.			Exhibit R-3	ទុ	
	874						Item 98

874

Item 98

RDT&E BUDGET ITEM JI		FICATION	HS NC	ET (R-2	JSTIFICATION SHEET (R-2 Exhibit)			DATE <b>Fel</b>	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	evelopment	ent	PE NU 060 Eng	PE NUMBER AND TITLE 0604804A Logi Engineering De	PE NUMBER AND TITLE 0604804A Logistics And E Engineering Development	And Eng ment	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	uipment	ā <b>-</b>	PROJECT DL39
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL39 General Support Equipment Engineering Development	2682	1587	1649	1734	2205	2442	2199	2219	Continuing	Continuing
C. Other Program Funding Summary									] '	
RDTE A Budget Activity 4	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
PE 0603804A, Project DK39 General Support Equip Adv Dev	984	853	985	006	1497	1482	1799	1970	Cont'd	Cont'd
D. <u>Schedule Profile</u>	FY 1994 2 3	4	1 2 F	FY 1995 2 3	4	FY 1996 2 3	96 3 4	-	FY 1997 2 3	4
Complete evaluation of NBC protective covers for 600 GPH ROWPU.  Perform COEA of NBC protection	^	* *								
Initiate final design for 3000 GPH ROWPU  Modular Collective Protective Equipment.	*									
Complete TDP and implementation procedures for the cold weather kit		*								
tor the 600 GPH ROWPU. Initiate evaluation of cold weather		**								
protection for storage & distribution equip. Initiate evaluation of candidate lightweight water purifiers (LWP).	~	*								
			Page 20 of 39 Pages	9 Pages				Exhibit R-2	2	

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-	2 Exhib	ŧ			DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE  0604804A Logistics And Engineer Equipment	TITLE Logistic	s And	Engine	er Eq	uipment		
YOU THE			ישוואלי	/001 /2			2001	
1 2 3 4 1	rr 1995 2 3	4	- - -	rr 1936 2 3	4	,4	FY 1997 2 3	4
						•	, !	
evaluation of ocean intake and direct drive								
systems and improvements to the family								
Complete fabrication of 4 production X•								
prototypes of the Heavy Contact								
É								
Complete test of the CMT.								
Complete testing of NBC protective covers		×						
for 3000 GPH ROWPU and incorporate								-
into existing TDPs and manuals.								
Complete winterization of water storage		×						
& distribution equipment and incorporate								
improvements into TDPs and manuals.								
Continue evaluation of candidate		×						
lightweight water purifiers.								
Prepare contract package for prototype		×						
of lightweight water purifier.								
Conduct Milestone I IPR		×						
High Capacity Purifier (HCP).								
Perform trade-off analysis on HCP subsystems	×							,
Initiate contract package for design and	×							
fabrication of prototype High Capacity Purifiers.								
Complete Market Investigation of	×							
Packaged Water Systems.								
Conduct tests on 36K ECU prototypes.					×			
Award contract for design/fabrication of		•	×					
prototype Lightweight Water Purifier.								
Conduct Pre Production Qualification					×			
5						1 1 1 1	c	
7. ade. 1	rage 21 of 39 rages					באווטוו א-ב	7.	
	876							Item 98





Bright Script   Bright Scrip	RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 1995
FY 1994	BUDGET ACTIVITY  3 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics And Engineer Engineering Development	· Equipment
m.  fier.  fier.  X  X  X  x  x  inflier  Page 22 of 39 Pages  Exhibit R-2	FY 1994 1 2 3 4 1	<b>.</b>	Y 199
n.  fifer:  I I IPR  X  X  X  X  X  X  A  A  Page 22 of 39 Pages  Exhibit R-2			
fier. X X X X I IPR X X X X X X X X X X X X X X X X X X X	prototype High Capacity Purifier.  Award contract for design/fabrication of		×
I IPR X X X X X X X X Y X Y Y Y Y Y Y Y Y Y	Prepare data package for improved		×
K X X I I I I I I I I I I I I I I I I I	ECU procurement.  Conduct IOT&E of the LWP.		×;
X X X X X X X X X X X X X X X X X X X	Hold Milestone III In Process Review to Type Classify Lightweight Water Purifier.		
X X Y Age 22 of 39 Pages Exhibit R-2	Complete fabrication of prototype High Canacity Purifier		×
X   Page 22 of 39 Pages  Exhibit R-2	Conduct Engineering		×
Page 22 of 39 Pages	Conduct Packaged Water System MS I/II IPR	×	
	College; (vic. 11 at N. 10) (12 a) Capacity 1 at a capacity 1		:
	Page	12 of 39 Pages	Exhibit R-2

RD.	RDT&E PROGRAM ELEME	RAM ELE	MENT/PRO	JECT C	OST BR	EAKDO	NT/PROJECT COST BREAKDOWN (R-3)		DATE	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ig And Manu	facturing [	<b>Development</b>		PE NUMBER AND TITLE 0604804A Logi Engineering De	AND TITLE A Logist	PE NUMBER AND TITLE 0604804A Logistics And E Engineering Development	ס דודנב Logistics And Engineer Equipment ig Development	quipmen		PROJECT DL39
A. Project Cost Breakdown Hardware Development Operational Test and Evaluation Dev. Jopment Test and Evaluation Government Engineering and Support Government Program Support Miscellaneous Total	reakdown nent nd Evaluation and Evaluation ering and Support am Support	T		EY 1994 1700 130 0 377 200 275 2682	걾	EX 1995 1019 0 0 212 150 206 1587	EY 1996 1000 0 225 224 150 50 1649	EY 1997 1075 150 150 201 108 50			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performi Performing or Funding Obligation Activ Activity Vehicle Date EA	ition History and alzations Contract Method/Type or Funding	d Planning 'inf Award or Obligation Date	ormation Performing Activity EAC	Project Office EAC	Total Prior to	EY 1994	FY 1995	EY 1996	EY 1997	Budget to Complete	Total Program
Product Development Organizations -NONE Support and Management Organizations - Test and Evaluation Organizations - NON Miscellaneous TACOM In-House Vario	ent Organizations gement Organizat n Organizations In-House	ions - NONE - NONE - Various	E 1051	1051		1944	524	349	349		
				Page 2	Page 23 of 39 Pages	SS			Exhibit R-3	<del>S</del>	
					878						Item 98

RDT&E	PROGE	RDT&E PROGRAM ELEME		)JECT (	NT/PROJECT COST BREAKDOWN (R-3)	EAKDO	WN (R-3		DATE F	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	d Manuf	acturing C	)evelopment		PE NUMBER AND TITLE 0604804A Logi Engineering De	PE NUMBER AND TITLE 0604804A Logistics And E Engineering Development	ics And E	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	quipmen		PROJECT DL39
Contractor or Contract Government Method/ Performing or Fundi Activity Vehicle	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	EY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
Contractors-Various CP TECOM MI TEXCOM MI NFESC MI CRREL MI	CPFF MIPR MIPR MIPR MIPR					222 65 100 70	527 100 100 150 75	1000	1185 100 100		
STTR in FY 95 Tal	MIPR					80 201 2682	80 31 1587	1649	1734		
Government Furnished Property -	Property -	A/N			Total Prior to					Budget to	Total
Subtotal Product Development - NONE Subtotal Support and Management - NONE	ment - N( ragement -	ONE			EY 1994	FY 1994	EY 1995	EY 1996	FY 1997	Complete	Program
Subtotal Test and Evaluation - NONE Subtotal Miscellaneous Tr tal Project	ion - NON	띧				2682	1587	1649	1734		
				Page	Page 24 of 39 Pages	səz			Exhibit R-3	R-3	

RDT&E BUDGET ITEM JU	M JUST	FICATI	ON SHE	STIFICATION SHEET (R-2 Exhibit)	Exhibit			DATE Fel	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NU 060 Enç	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	nte ogistics Develop	And Eng ment	ineer Eq	uipment		PROJECT DL41
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1906 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL41 Fuels Handling Equipment Engineering Development	1424	1457	0ZZ1	1070	21.	1220	82.	1197	Continuing	Continuing
C. Other Program Funding Summary									]	F
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	EY 1999	FY 2000	<b>EY 2001</b>	Comp	8
PE 0603804A, Project DK41, POL Distribution Equip Adv Dev	799	999	910	920	941	906	666	866	Cont.	Cont.
D. Schedule Profile	FY 1994	◀	E ~	FY 1995	4	FY 1996	% ~ 4	-	FY 1997	4
Fabricate 3 LAFARE prototypes. Completed component testing of LAFARE. Conduct TT/IOT&E, logistics demonstration, and physical configuration audit for LAFARE. Conduct MS III - TC for LAFARE. Conduct MS III - TC for the HERRS. Award HERRS EMD contract. Design & fabricate HERRS initial prototypes. Initiate HERRS component testing. Fab icate final HERRS prototype. Cor duct MS I/II IPR for the BFS.		**	Page 25 of 39 Pages	9 Pages	× × ××		× ×	Exhibit R-2	7	××
			880							Item 98

RDT&E PROGRAM ELEME	GRAM EL	EMENT/PR	NT/PROJECT C	OST BF	<b>EAKDO</b>	COST BREAKDOWN (R-3)		DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	nufacturing	Developmen		PE NUMBER AND TITLE 0604804A LOGI Engineering De	AND TITLE 1A Logist rring Dev	PE NUMBER AND TITLE 0604804A Logistics And E Engineering Development	D TITLE Logistics And Engineer Equipment ig Development	quipmen		PROJECT DL41
A. Project Cost Breakdown			, in	Ì						
Hardware Development			1,283		727	8 8 2 2	008 1			
Test and Evaluation			22		350	જ	S			
Government Engineering and Support	port		2 5		282	197	148			
Miscellaneous			<b>\$</b> 0		7 <b>8</b> 7	χ o	27 0			
Total			1424		1457	1220	1,070			
B. Budget Acquisition History and Planning Informat	and Planning In	<u>formation</u>								
Performing Organizations										
Contractor or Contract Government Method/Tyme	Award or	Performing	Project	Total						
	_	Activity	Office	Prior to					Budget to	Total
ACTIVITY   Vehicle	Date	EAC	EAC	FY 1994	EY 1994	EY 1995	EY 1996	FY 1997	Complete	Program
Product Development Organizations - NONE Support and Management Organizations - NONE	ons - NONE	(x)								
Test and Evaluation Organizations - NONE	is - NONE	l								
Miscellaneous:					:	•	•			
	various	119			611	330	245	200		
	9512	1283			1283	227	8 8	<u></u>		
¥	9402	<u>.</u> 01			<b>:</b> 2	7 O	2 02	2		
						25	25	2 2		
SBIR/STTR						<b>78</b>	<b> </b>	}		
Government Furnished Property - NONE	HNON - A									
			Page	Page 26 of 39 Pages	Sa			Exhibit R.3	<b>~</b>	

RDT&E PROGRAM ELEMENT/PROJEC	NT/PROJECT COST BREAKDOWN (R-3)	WN (R-3		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	tics And E	ngineer E	quipmen		PROJECT DL41
Subtotal Product Development - NONE Subtotal Support and Management - NONE	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Test and Evaluation - NONE Subtotal Miscellaneous Total Project	1424 1424	1457	1220 1220	1070 1070	Cont'd Cont'd	Cont'd Cont'd
P	Page 27 of 39 Pages			Exhibit R-3	ဗ္	<del> </del>
						3

882

Item 98

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATION	ON SHE	ET (R-2	Exhibit	()		DATE Fet	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	evelopment	ent	PE NU 060 Eng	PE NUMBER AND TITLE 0604804A Logi Engineering De	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	And Engiment	ineer Eq	uipment	# J	PROJECT DL42
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estlinate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DL42 Camouflage System Engineering Development	0	0	1290	86	988	988	95	83	Continuing	Continuing
C. Other Program Funding Summary RDTE, A Budget Activity 2 PE 0602786A, AH20, Mobility Equipment Technology	FY 1994 7323	FY 1995 9457	FY 1996 7203	FY 1997 7397	FY 1998 8173	FY 1999 8953	EY 2000 8253	FY 2001 8458	To Compl Cont'd	Total Cost Cont'd
NOTE: Camouflage is a Defense Business Operating Fund (DBOF) production item.	ng Fund (DB	OF) product	ion item.							
D. Schedule Profile  Desert ULCANS P31 MDR MSCS- ME MS I/II Snow ULCANS P31 MDR EO Signature Enhancements ULCANS P31 MDR	FY 1994 2 3	4	_ F - C	FY 1995 2 3	-	FY 1996 2 3 X	δω 4 ×		FY 1997 2 3	4 XX
			Pare 28 of 39 Pares	9 Papes				Exhibit R-2	21	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ECT CO	ST BREAK	<b>JOWN (R-3)</b>	DATE	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	# 8 m	PE NUMBER AND TITLE O604804A Logistics And E Engineering Development	pistics And Elevelopment	gineer Equipme	PROJECT DL42
A. Project Cost Breakdown					
Causerment Engineering Comment	EX 1994	EY 1995	EV 1996	EY 1997	
Contractor Engineering Support	0	0	767	395 295	
Developmental Test and Evaluation	0	0	700	8 81	
Travel	0	0	×	90	
Miscellaneous Total	0 0	0 0	8 5	25 20	
		•			
	Page 29 of 39 Pages	39 Pages		Exhibit R-3	
	400	•			No most

884

Item 98

RDT&E BUDGET ITEM JU		FICATION	ON SHE	ET (R-2	STIFICATION SHEET (R-2 Exhibit)			DATE Fel	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NU 060 Eng	PE NUMBER AND TITLE 0604804A Logi Engineering De	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	And Eng ment	ineer Eq	uipment		PROJECT D194
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D194 Engine Driven Generators Engineering Development	1508	1989	833	882	270	286	719	723	Continuing	Continuing
C. Other Program Fundin mmary										E
ODA DA2 OLIVERATE STATE OF THE PROPERTY OF THE	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
MA9800, Generators and Associated Equip	24797	25206	13761	15715	15865	16493	38200	65205	Cont'd	Cont'd
D. Schedule Profile	FY 1994 2 3	4	1 2	FY 1995 2 3	4	FY 1996 2 3	96 3 4	prost	FY 1997 2 3	4
Award contracts for fabrication/testing for a 5 kW 28VDC (APU).  Complete the test phase of Foreign Comparative Test program for LT 3 kW program.  Complete cold weather starting kit program for Tactical Quiet Generator (TQG) sets.  Complete design and down-select 5 kW 28 VDC APU.  Initiate testing 5 kW 28  VDC APU.  Begin fabrication of 5 kW 28VDC APU Production Qualification Test (PQT) models.  Begin testing of 5 kW 28VDC APU PQT models.		* *		×	*		×			
			Page 30 of 39 Pages	9 Pages				Exhibit R-2	8	
										74 00

885

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)		DATE February 1995	1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	And Engineer Eq	uipment	PROJECT <b>D194</b>
FY 1994 1 2 3 4 1	FY 1995 FY 2 2	FY 1996 2 3 4	FY 1997	3 4
Complete fabrication of 5 kW 28 VDC PQT Models. Complete testing of 5 kW 28VDC APU PQT		×		
models. Complete preparation of formal program review of 5 kW 28 VDC APU.			×	×
Begin development of 3 kW (1QG)		×		
				······
Page	Page 31 of 39 Pages		Exhibit R-2	
	700			Item 98

Item 98

RDT&E PROGRAM ELEME	AM ELER		SJECT (	NT/PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	cturing De	svelopment		PE NUMBER AND TITLE 0604804A Logi Engineering De	E NUMBER AND TITLE 0604804A Logistics And E Engineering Development	ics And E	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	quipmen		РRОЈЕСТ <b>D194</b>
A. Project Cost Breakdown		FY 1994	FY 1995	FY 1996	P 96	FY 1997				
Primary Hardware Development Test and Evaluation		006	1168		400 200	150				
Government Engineering and Support Program Management		306	36 5	•	5,5	6 9				
Miscellaneous Total		150	221 221 1989	•	88 833	29 <b>9</b>				
B. Budget Acquisition History and Planning Information	anning Infor	mation								
) rganiz										
Contractor or Contract Government Method/Type Av		Performing	Project	Total					-	ŀ
or runding Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Sudget to Complete	l otal Program
Contractors Various CPFF 94	9406				006	1168	400	0		
Support and Management Organizations Test and Evaluation Organizations None Miscellaneous	s None									
In-House	Various	NA	N/A		909	589	233	149	Cont'd	Cont'd
TECOM MIPR SBIR/STTR	Various				0	200 33	700	150	Cont'd	Cont'd
Project TOTAL					1506	1989	833	299	Cont'd	Cont'd
Government Furnished Property NO	NONE									
			Page	Page 32 of 39 Pages	્			Exhibit R-3	e:	

RDT&E BUDGET ITEM JI	M JUST	FICATION	ON SHE	ET (R-2	JSTIFICATION SHEET (R-2 Exhibit)			DATE Fe	February 19	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	Development	ent	PENU 060 Eng	PE NUMBER AND TITLE 0604804A Logi Engineering De	PE NUMBER AND TITLE 0604804A Logistics And E Engineering Development	And Eng	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	uipment	1	РRОЈЕСТ <b>D279</b>
COST (in Thousands)	FY 1994 Actual	FY 1996 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
D279 Airdrop Equipment Engineering Development	4462	1487	1483	2	1502	1507	1548	15.46	Continuing	Continuing
C. Other Program Funding Summary									}	
RDTE A Bidget Activity 4	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
PE 0603804A Project D266 Airdrop Equip Adv	4022	1224	1493	14%	1502	1507	1499	1696	Cont'd	Cont'd
NOTE: Camouflage is a Defense Business Operating Fund (DBOF) production item.										
D. Schedule Profile	FY 1994		Ŀ	Y 199		FY 1996	*		FY 1997	
Complete TT/OT of single unit 60,000k Ib	2		1 2	m	<b>4</b>	7	4	-	2 3	4
Complete Technical/User tests of 60,000k  To linked platform airdrop system		,		×						
Conduct technical/ User tests of GPADS-							×			· · ·
ngin Award development contract for GPADS- medium									×	
			Page 33 of 39 Pages	9 Pages				Exhibit R-2	61	
			000							Item 08

888 UNCLASSIFIED

RDT&E PROGRAM ELEMENT	NT/PROJECT COST BREAKDOWN (R-3)	T COST B	REAKDO	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	oment	РЕ NUMBE 06048( Engin	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	tics And E	ngineer E	quipmen		Р <b>ROJECT</b> <b>D279</b>
A. Project Cost Breakdown Primary Hardware Development Program Management Support		EV 1994 E 3211 S30	EV 1995 1017 185	EY 1996 985 185	EY 1997 995 185			
Test and Evaluation Miscellaneous Total	,	4462	234 31 1487	1493	1496			· · · · · · · · · · · · · · · · · · ·
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC	pa ming Project tivity Office EAC EAC	Total	EY 1994	EY 1995	EY 1996	FY 1997	Budget to Complete	Total Program
	N/A N/A	A 12299	3211	1017	978	886	Cont	Cont
stions	N/A N/A	A 1605	530	185	185	185	Cont	Cont
Test and Evaluation Organizations TECOM, EGLIN AFB, ABSOTD. Miscellaneous SBIR/STTR	N/A N/A	A 4940	721	254	330	323	Cont	Cont
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation		12299 1605 4940	3,211 530 721	1017 185 254 31	978 185 330	988 185 323	Cont	Cont
Subtotal Miscellancous Total Project Government Furnished Property: NONE		18844	4462	1487	1493	1496	Cont	Cont
		Page 34 of 39 Pages	ages			Exhibit R-3	2-3	80
		880						IIem y8

886

RDT&E BUDGET ITEM JU		FICATIO	ON SHE	STIFICATION SHEET (R-2 Exhibit)	Exhibit			DATE Fet	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NU 060 Eng	PENUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	mle ogistics Develop	And Eng ment	ineer Eq	uipment	iq I	PROJECT D429
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1989 Estimata	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D429 Tactical Rigid Wall Shalters Engineering Development	5043	3561	2870	3377	2467	1134	1236	1287	Continuing	Continuing
C. Other Program Funding Summary	FY 1994	EY 1995	EY 1996	EX 1997	EY 1998	EY 1999	FY 2000	FY 2001	To Compl	Total
to include ISO Shelters, ATCCS and MRWS. (Approx. \$20M per year) OPA, BA3, Other Support Equipment MX1010, SICPS R12300, CBPS	20250	6869								
D. Schedule Profile  Complete development of SICPS 5-ton E-van	FY 1994	<b>2</b> € 4.¥	-	FY 1995 2 3	4	FY 1996	398 4	-	FY 1997 2 3	4
TC Lightweight Multi-Purpose Shelter Milestone III for non-expandable EMI ISO shelter Milestone II objective version SICPS RWS Milestone III MERWS Conduct OT objective version SICPS RWS TT of ISO EMI P31 components Milestone III objective version SICPS RWS	*	!		×	× ×		×		×	×
		·	Page 35 of 39 Pages	19 Pages				Exhibit R-2	8	
	Andrea of the first special sp		068							Item 98

860

RD	RDT&E PROGRAM ELEME	RAM ELE	EMENT/PRO	JECT C	OST BR	EAKDO	NT/PROJECT COST BREAKDOWN (R-3)		DATE Fe	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Deve	ng And Manu	facturing l	Development		PE NUMBER AND TITLE 0604804A Logi Engineering De	E NUMBER AND TITLE 0604804A Logistics And E Engineering Development	iics And E	PE NUMBER AND TITLE 0604804A Logistics And Engineer Equipment Engineering Development	quipment		PROJECT <b>D429</b>
A. Project Cost Breakdown	reakdown			7	2	FV 1994	FV 1096	FV 1997			
Primary Hardware Development	Development			2530	1	1516	1486	1577			
Program Management Support Test and Evaluation	nent Support n			1000 1513		900 1089	818 866	<b>3</b> 8			
Miscellancous Total				5043		76 3581	2870	3377	_		
B. Budget Acquisition History and Planning Information	iltion History and	d Planning In	formation								
Performing Organizations Contractor or Contra Government Metho Performing or Fur Activity Vehicle	nizations Contract Method/Type or Funding	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	EY 1994	EY 1995	EY 1996	EY 1997	Budget to Complete	Total Program
Product Development Organizations   Natick, Gichner,	ent Organizations				9128	2530	1592	1486	1577	Cont	Cont
Brunswick, DBA Support and Management Organizations Natick, GTS, GEO	gement Organizal	Lions			3651	1000	006	518	006	Cont	Cont
Centers Test and Evaluation Organizations TECOM, CSTA,	n Organizations				3477	1513	1013	998	006	Cont	Cont
YPG, TEXCOM Miscellancous BIR/STTR					0	0	76	0	0	0	0
				Page	Page 36 of 39 Pages	SS			Exhibit R-3	2-2	
					891						Item 98

891

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3		DATE	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604804A Logi Engineering De	AND TITLE A Logist ring Deve	PE NUMBER AND TITLE OGO AND Engineer Equipment Engineering Development	ngineer E	dulpmen		
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	9128 3651 5477 18,256	EY 1994 2530 1000 1513 5043	EV 1995 1592 900 1089 3581	EV 1996 1486 518 866 2870	EY 1997 1577 900 900 3377	Budget to Complete Cont Cont Cont Cont Cont	Program Cont Cont
Government Purnished Property: None							
Page	Page 37 of 39 Pages 892	ş			Exhibit R-3	g	Item 98
	740						,

RDT&E BUDGET ITEM JE	M JUST	FICATION	ON SHE	ET (R-2	JSTIFICATION SHEET (R-2 Exhibit)	a l		DATE Fe	February 19	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	evelopment	ent	PE NU 060 Eng	PE NUMBER AND TITLE 0604804A Logi Engineering De	VE NUMBER AND TITLE 0604804A Logistics And E Engineering Development	And Eng	TITLE Logistics And Engineer Equipment ig Development	uipment		PROJECT <b>D461</b>
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D461 Marthe Oriented Logistics Equipment Engineering Development	0	272	*	O	0	0	o	0	Continuing	Continuing
C. Other Program Funding Summary									£	F
OPA. BA3. Other Support Equipment	FY 1994	FY 1995	FY 1996	EY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
M32400 Floating Crane M44500 Pusher Tug MA0900. LARC-60 SLEP			3576	14900 7152	14913 7158	14914	6989	0969	0	44727 17886 13919
D. Schedule Profile	FY 1994		<b>E.</b> .	Y 199		FY 19%	8		FY 1997	
Pusher Tug Milestone I/III Contract Award Material Release	<b>N</b>	•	-	m	<del>4</del> ×	~	w X 4	<b></b> -	e e	4 X
Floating Crane Mission Need State Milestone I/III Contract Award	*	•						×	×	
		d	Page 38 of 39 Pages	) Pages				Exhibit R-2	2	

JT&E PROGRAM ELEMEI	NT/PROJECT COST BREAKDOWN (R-3)	OWN (R-3)	DATE	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604804A Logistics And E Engineering Development	stics And Engivelopment	PENUMBER ALISTITLE 0604804A Logistics And Engineer Equipment Engineering Development	PROJECT D461
A. Project Cost Breakdown  Contractor Engineering Support (includes test & evaluation) Program Management Support SBIR/STTR (FY 95) Total	FY 1994 EY 1995 2689 46 59 2794	318 318 348	FY 1997	
THE CHAPTER STREET, AT THE STREET, A	Page 39 of 39 Pages		Exhibit R-3	L Ad
	864			Item 98

894

Item 98

	RDT&E BUDGET ITEM JI	A JUST	FICATI(	ON SHE	ET (R-2	USTIFICATION SHEET (R-2 Exhibit)	_		DATE Fel	February 1995	95
Bubat 5 En	BUDGET ACTIVITY  5 Engineering And Manufacturing Develo	velopment	nt T	PE NU 060	PE NUMBER AND TITLE 0604805A Cmd	E NUMBER AND TITLE O604805A Cmd, Comm Systems Engr Dev	1, Comm	Systems	Engr De	<b>&gt;</b> 6	
	COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1988 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	8971	11237	13432	10842	9089	6894	0	0	Continuing	Continuing
D097	D097 C3I Interoperability Network Activity	1834	1850	1782	977	1762	1747	0	0	Continuing	Continuing
9800	D096 Tactical Radio Accessories	1218	0	196	597	597	287	0	0	0	4989
D282	D282 SINCGARS-V Engineering Development	1712	4535	7383	7280	0	0	0	0	0	Continuing
D485	D485 C4 Interoperability Standardization and Certification	0	78	496	498	497	498	0	0	Continuing	Continuing
0488	D488 Tactical Net Radio Communications	4207	4774	3564	3691	3852	4052	0	0	Continuing	Continuing

communications and intelligence (C3I) systems and equipment, and the supporting interoperability facilities. Included is engineering development of life-cycle capability radios to operate on one antenna for reduced visual signature and rapid transportability and set-up; and follow on programs to demonstrated technologies evolving from Wireless Network Access, Communications Network Planning and Management and initiatives to establish a Multiband Radio Integrated testbed. The projects in this (SINCGARS) product improvements identified in the SINCGARS System Improvement Plan; the Frequency Hopping Multiplexer (FH MUX) which allows multiple Program Element support research efforts in the engineering and manufacturing development phases of the acquisition process and are therefore correctly placed in to develop, test, and maintain interoperability, and support an interoperability development and evaluation process consisting of an Army interoperability board and technical management to ensure maximum horizontal and vertical integration for Army battlefield digitization. Also included is the Army portion of engineering development efforts in support of the Combat Survivor Evader Locator System (CSEL). This includes the Single Channel Ground and Airborne Radio System A. Mission Description and Budget Item Justification: In support of the Army Enterprise Strategy, achieve interoperability within the Army and with the Join/Combined forces, this program includes Engineering and Manufacturing Development (EMD), interoperability evaluation of Army command, control,

evolve interoperability standards and protocols, and support testing required to ment the DOD interoperability objectives. Provide the connectivity for achieving horizontal supporting Army C31 systems throughout the . life-cycle, which provides the capability to develop, test, and maintain interoperability, and support a continuous life-cycle and vertical integration, and initiatives such as C41 for the Warrior, Louisians. Manewers, Battle Labs Process, Digitizing the Battlefield (Force XXI), and Life-Cycle interoperability development and evaluation process through remote access to the actual C31 systems and test evaluation facilities. Enable engineering solutions that replicate battlefield configurations by networking dispersed C31 systems, creating the environments needed to identify, isolate, and resolve interoperability problems, Project D097 - C3I Interoperability Network Activity: Provide a suite of distributed communications, sites, and services (Army Interoperability Network - AIN) Software Engineering.

Page 1 of 16 Pages

Exhibit R-2

895

RDT&E BUDGET ITEM	M JUSTIFICATION SHEET (R-2 Exhibit)	DATE	February 1995
BUDGET ACTIVITY  5 Engineering And Manufacturing Devel	opment	, Cntrl, Comm Systems Engr	Dev
<ul> <li>FY 1994 Accomplishments:</li> <li>Began AIN Block-1 Development (supports emerging C4I interoperability test evaluation</li> <li>Installed two new remote field command and control (C2) interoperability sites (395)</li> <li>Supported JCS' C4I for the Warrior and interservice tactical switch interoperability (90)</li> <li>Supported interoperability development, testing, and sustainment of Army's C4I systems</li> </ul>	Began AIN Block-1 Development (supports emerging C4I interoperability test evaluation requirements) (988) Installed two new remote field command and control (C2) interoperability sites (395) Supported JCS' C4I for the Warrior and interservice tactical switch interoperability (90) Supported interoperability development, testing, and sustainment of Army's C4I systems (PEOs, PMs, CECOM and fielded systems) (361)	nts) (988) s, CECOM and fielded systems) (361)	
<ul> <li>FY 1995 Planned Program:</li> <li>Integrate AIN Block-1 Capabilities into Task Force XXI sites (835)</li> <li>Develop Rapid deployment AIN Video Teleconferencing (VTC) communications package(106)</li> <li>Support PEOs, PMs, and CECOM in achieving systems Army/Joint interoperability, C4I certifications to support Joint Chiefs of Staff (JCS) C4I for the Warrior, and interservice tactical swell install two remote field support sites (390)</li> <li>Begin compliance and interoperability testing support for Task Force XXI system implementations.</li> <li>Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (ST</li> </ul>	Integrate AIN Block-1 Capabilities into Task Force XXI sites (835)  Develop Rapid deployment AIN Video Teleconferencing (VTC) communications package(106)  Support PEOs, PMs, and CECOM in achieving systems Army/Joint interoperability, C4I certification testing and DOD policy objectives (190)  Continue to support Joint Chiefs of Staff (JCS) C4I for the Warrior, and interservice tactical switching, and other Army Interoperability programs (75)  Install two remote field support sites (390)  Begin compliance and interoperability testing support for Task Force XXI system implementations (215)  Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR) (39)	n testing and DOD policy objectives (190 ng, and other Army Interoperability progr 215)	ams (' 5)
<ul> <li>FY 1996 Planned Program:</li> <li>Enhance AIN Block-1 capabilities to support Force XXI and Force XXI sites (645)</li> <li>Evolve AIN protocol test capabilities to support Force XXI requirements (200)</li> <li>Develop rapid deployment AIN broadcast and non-RF communications capability (392)</li> <li>Provide compliance and interoperability testing support for Task Force XXI system implement to support Army's interservice tactical switching and other Army interoperability C41</li> <li>Support PEOs, PMs and CECOM in achieving systems Army/Joint interoperability C41</li> </ul>	Enhance AIN Block-1 capabilities to support Force XXI and Force XXI sites (645)  Evolve AIN Block-1 capabilities to support Force XXI and Force XXI sites (645)  Evolve AIN protocol test capabilities to support Force XXI requirements (200)  Develop rapid deployment AIN broadcast and non-RF communications capability (392)  Provide compliance and interoperability testing support for Task Force XXI system implementations (295)  Continue to support Army's interservice tactical switching and other Army interoperability programs (75)  Support PEOs, PMs and CECOM in achieving systems Army/Joint interoperability C4I certification testing and DOD policy objectives (175)	(295) s (75) testing and DOD policy objectives (175)	
<ul> <li>FY 1997 Planned Program:</li> <li>Complete AIN Block-1 capabilities and integration. (675)</li> <li>Evolve AIN protocol test capabilities to support Force XXI requirements (190)</li> <li>Install two remote field support sites (395)</li> <li>Provide compliance and interoperability testing support for Force XXI and Force Continue to support Army's interservice tactical switching and other Army interpoperal Support PEOs, PMs, and CECOM in achieving systems Army/Joint interopera</li> </ul>	Complete AIN Block-1 capabilities and integration. (675)  Evolve AIN Block-1 capabilities to support Force XXI requirements (190)  Evolve AIN protocol test capabilities to support Force XXI requirements (190)  Install two remote field support sites (395)  Provide compliance and interoperability testing support for Force XXI and Force XXI system implementations (291)  Continue to support Army's interservice tactical switching and other Army interoperability programs (75)  Support PEOs, PMs, and CECOM in achieving systems Army/Joint interoperability, C4I certification testing and DOD policy objectives. (150)	nentations (291) s (75) n testing and DOD policy objectives. (150	(6
	Page 2 of 16 Pages	Exhibit R-2	R-2
	```		Ve mail

968

	DATE February 1995	
	<b>BUDGET IT</b>	<b>∠</b> L∑

throughout the battlefield, while providing the necessary traffic isolation between SINCGARS data nets needed to maximize the available throughput. It will provide both communication with downed personnel in need of extraction from hostile territories. The CSEL system will include the capability to pass data directly into the standard beginning in FY 96. In FY 96, this project will provide for development efforts for the Combat Survivor Evader Locator System (CSEL), a joint program led by the Air Project D098 - Tactical Radio Accessories: In FY94, this project funds development of radio improvements resulting from emerging technologies. This includes the warfighter command, control, communications, computer, and intelligence (C41) systems envisioned by the C41 for the Warrior Concept. The user's equipment will Improvements will be incorporated into the current production of the airborne radio via Engineering Change Proposal (ECP) cut-in to the current production line SINCGARS Forward Error Correction design improvements, part of the SINCGARS System Improvement Plan (SIP) which reduces bit error rate data messages Force. This program will provide service, joint, and/or composite operational recovery rescue forces with the capability to pinpoint the location of and establish a voice and data Gateway to the Area Common User System (ACUS). In FY 95 these efforts transition to Project D282 contained within this Program Element. 0604805A Cmd, Cntrl, Comm Systems Engr Dev consist of a small hand-held unit used for geopositioning, Over the Horizon data communications, and two-way Line of Sight voice communications. PE NOMBER AND LINE 5 Engineering And Manufacturing Development

# FY 1994 Accomplishments:

- Initiated design plans for airborne SIP development (220)
- Finalized airborne system definition (aircraft/receiver-transmitter interface) (100)
  - Initiated core hardware development (898)

FY 1995 Planned Program: Program unfunded in FY 1995

### FY 1996 Planned Program:

Support Air Force development efforts on the CSEL program (195)

## FY 1997 Planned Program:

Support Air Force development efforts on the CSEL program (597)

Acquisition Strategy: The joint Air Force led acquisition strategy is to pursue a modified Non-Developmental Item (NDI) approach for the hand-held unit and award a production contract beginning in FY 99.

Combat Net Radio. Product improvements included are Global Positioning System (GPS) interfaces, Airborne Battlefield Combat Identification System (BCIS), Forward Error Correction (FEC) (data transmission enhancement techniques), improved data capability, weight reduction (to include a Half-size Receiver-Transmitter, Battery Box Project D282 - SINCGARS-V Engineering Development: This program provides for analysis and implementation of overall product improvements to the SINCGARS switched system dial up interfacing. Program provides simplified operations, improved performance of existing capabilities, new operational capabilities and reduced life and Vehicular Appliqué), MANPRINT (ease of operations), vehicular system re-engineering, improved electronic counter-counter measure (ECCM) performance and cycle costs.

Page 3 of 16 Pages

Exhibit R-2

NDT&E BUDGET ITEM J	USTIFICATION SHEET (R-2 Exhibit) PATE Fet	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 Engineering And Manufacturing Development	0604805A Cmd, Cntrl, Comm Systems Engr Dev	<u> </u>

# FY 1994 Accomplishments:

- Continued development of SINCGARS GPS interface and FEC hardware/development for ITT (1030)
- Conducted design verification testing for FEC for ITT (656)
- Conducted field demonstration of GPS/FEC prototype models (26)

#### 1995 Planned Program: K

- Initiate design feasibility study for an ITT SINCGARS Half-Size radio as part of the planned SIP program (1000)
- Initiate design feasibility study for a General Dynamics (GD) SINCGARS Half-Size radio as part of the planned SIP program (1000)
- SIP Engineering Support (1000)
- Initiate development of Airborne BCIS (1204)
- Program Management Support (135)
- Continue hardware and software compatibility testing with aircraft integrators (100)
- Small Business Innovative Research (SBIR)/Small Business Technology Transfer Program (STTR) (96)

# FY 1996 Planned Program:

- Airborne BCIS Demonstration (400)
- Initiate development effort for ITT SIP Half Size adio (3415)
- Initiate development effort for GD SIP Half Size radio (3415)
- Program Management Support (163)

# FY 1997 Planned Program:

- Complete development effort for ITT SIP Half Size radio (3390)
- Complete development effort for GD SIP Half Size radio (3390)
- Complete design verification testing/demonstrations for both ITT and GD Half Size Radios (500)

Acquisition Strategy: The Half-size Receiver-Transmitter and associated items planned development design products will be used by competitive producers as a part of the anticipated FY 97 production buyout of the SINCGARS radio.

621201, mandate the establishment and sustainment of interoperability between Army C4I systems, and within the Army and Joint/Allied C4I communities. This includes operation of the Army board to synergize and integrate the Army's interoperability certification testing and analysis, and configuration managemen, functions. Provide the integration of the Army systems' requirements and operational concepts documents with the joint standards and interface documents. Included is the Army's participation Project D485 - C41 Interoperability Standardization and Certification: The Army Enterprise Strategy, DOD 4630.5, DODI 4630.8, C41 for the Warrior, and CJSCI Army focal point for the review, staffing, coordination and development of Army positions for the interface interoperability standards and specifications. Direct the

Page 4 of 16 Pages

Exhibit R-2

tem 99

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1995	95
BUDGET ACTIVITY		

0604805A Cmd, Cntrl, Comm Systems Engr Dev

in Joint/Allied and intra-Army interoperability certification testing and the Army's representation in the Joint/Allied Configuration Management Process. This is a 5 Engineering And Manufacturing Development restructure of project D488, and not a new start.

FY 1994 Accomplishments: Efforts funded under PE 0604805A, Project D488

# FY 1995 Planned Program:

- Continue to Implement Army Five Year Interoperability Assurance Plan (FYIAP) to manage Army Interoperability testing requirements (76)

## FY 1996 Planned Program:

- Continuation of Army FYIAP implementation (120)
- Staff, consolidate, and formulate Army Interface Change Proposals (ICPs) (200)
  - Review ICP test results and represent the Army at joint test meetings (178)

#### 1997 Planned Program: Ŧ

- Continuation of Army FYIAP implementation (120)
- Staff, consolidate, and formulate Army Interface change proposals (200)
- Review ICP test results and represent the Army at joint test meetings (178)

Acquisition Strategy: The efforts funded within this project are non-system specific, therefore no Acquisition Strategy is provided.

Project D488 - Tactical Net Radio Communications: Develops the Frequency Hopping Multiplexer which allows multiple radios to operate on one antenna for reduced visual signature and rapid transportability and set-up. Performs procedural interoperability testing and provides the Army's gateway to interoperability test network for certification of Army C31 systems. Develops Wireless Network Access (WNA) to provide Comm interface to CHS host computers and transmission security for tactical operations. Provide for executive agent and requirements for test and evaluation of the Joint Task Force Comm Planning and Management System.

# FY 1994 Accomplishments:

- Completed development effort on the FH MUX (1439)
- Conducted design verification test on the FH MUX using development models (333)
- Initiated pilot (pre-production) FH MUX model fabrication(225)
- Prepared, coordinated, processed, and approved 340 Interface Change Proposals (ICPs), Convened 4 Army Configuration Control Boards (CCBs); Provided Army voting principal at 26 Joint/Combined review panels (1044)
  - Participated in 28 Army/Joint interoperability tests and provide Army voting principal at joint certification forums (627)

Page 5 of 16 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 EXHIBIT)	R-2 EXHIBIT	ر ا		DATE February 1995
<b>BUDGET ACTIVITY 5 Engineering And Manufacturing Development</b>	PENUMBER AND TITLE 0604805A Cmd	O TITLE CMd, Cntrl	PENUMBER AND TITLE O604805A Cmd, Comm Systems Engr Dev	ns Engr Dev
<ul> <li>Developed simulation/stimulation message drivers, analyzers and data reduction tolls for testing interoperability (219)</li> <li>Initiated implementation of Army Five Year Interoperability (FYIAP) to manage Army interoperability testing requirements (320)</li> <li>FY 1995 Planned Program:</li> <li>Complete pilot (pre-production) model fabrication (4529)</li> <li>Conduct operational test and evaluation on the FH MUX (30)</li> <li>Conduct Design Verification Testing (120)</li> <li>SBIR/STTR (95)</li> </ul>	uction tolls for test	ing interoperabili perability testing	ity (219) g requirements (320)	
<ul> <li>FY 1996 Planned Program:</li> <li>Complete Pre-Production Qualification FHMUX (Design Verification) testing (955)</li> <li>Prepare, complete and submit technical reports and documentation in support of FH MUX pre-production model fabrication(245)</li> <li>Ensure development of prototypes for COMM network management systems that meets Joint Task Force Comm Management Planning System requirements (800)</li> <li>Develop new applications for improved spectrum efficiency (800)</li> <li>Conduct Demonstration of initial Multiband Radio Integration testbed (764)</li> </ul>	ing (955) oort of FH MUX pn ns that meets Joint 4)	e-production mod Task Force Com	del fabrication(245) m Management Plan	ning System requirements (800)
<ul> <li>FY 1997 Planned Program:</li> <li>Develop prototype of Wireless Network Access (WNA) for test and evaluation. (951)</li> <li>Test prototype version 1 of Comm Network Management System (1000)</li> <li>Test high data radio for requirements of digitized battlefield (1000)</li> <li>Demonstrate interface of integration testbed to DIS2 and control capability to include automated test configuration. (740)</li> </ul>	tion. (951) r to include automa	ted test configura	ıtion. (740)	
Acquisition Strategy: The acquisition strategy for the FH MUX is to award a sole source contract for up to 50 FH MUX Pre-Production Qualification Test (PPQT) mo units to Xetron Corporation, Cincinnati, OH, the current developer of the FHMUX. This contract is an essential preparatory phase to the planned full rate production contract scheduled for 3QFY96 and will provide substantial reduction in production risk.	ole source contract IUX. This contract ction risk.	for up to 50 FH is an essential p	MUX Pre-Production reparatory phase to tl	MUX is to award a sole source contract for up to 50 FH MUX Pre-Production Qualification Test (PPQT) model keveloper of the FHMUX. This contract is an essential preparatory phase to the planned full rate production al reduction in production risk.
Ħ	FY 1995 11386 11237	FY 1996 14592	FY 1997 10484	
Adjustments to Appropriated Value  a. SBIR/STTR decrement (-135)  Current President's Budget Submit  8971	11237	13432	13842	
P	Page 6 of 16 Pages			Exhibit R-2
	006			Item 99

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	IFICATI(	ON SHE	ET (R-2	Exhibit	(a		DATE <b>Fel</b>	February 1995	96
BUDGET ACTIVITY  5 Engineering And Manufacturing Development	evelopme	nt	PE NL 060	PE NUMBER AND TITLE 0604805A Cmd	PENUMBER AND TITLE 0604805A Cmd, Cntrl, Comm Systems Engr Dev	1, Comm	System	s Engr De		PROJECT <b>D097</b>
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
C3I Interoperability Network Activity	28	2 <b>8</b> 5	1782	1776	1762	1747	0	0	0 Continuing	
O. D B B S S Then an at other miletal DDTBE or other Americanistism officies	20,000	Josef DITE	E or other	) portoniatio	n efforte					

C. Other Program Funding Symmary: There are no other related RDT&E or other Appropriation efforts.

D. Schedule Profile: The efforts funded in this project are non-system specific, therefore no Milestones are provided.

Page 7 of 16 Pages 901

OGRAM ELEMENT/PROJ	ST BRE	ECT COST BREAKDOWN (R-3)	(2-3)	DATE	February 1995
BUDGET ACTIVITY  5 Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604805A CMd	d, Cntrl, Com	0604805A Cmd, Cntrl, Comm Systems Engr Dev	PROJECT D097
A. Project Cost Breakdown  Contractual Engineering Support Government Engineering Support Development Test and Evaluation Training Travel	FY 1994 1239 219 369 3 4 1834	FY 1995 1175 480 150 13 33	FY 1996 1107 480 150 13 33	FY 1997 1101 480 150 12 33	
B. Budzet Acquisition History and Planning Information: N/A					

Page 8 of 16 Pages

Item 99

Exhibit R-3

Sendine From National Manufacturing Development   Project Activation	RDT&E PROGRAM ELEME	MENT/F	NT/PROJECT		T BREA	COST BREAKDOWN (R-3)	I (R-3)		DATE Fe	February 1995	95
FY 1694   FY 1695   FY 1695   FY 1695   FY 1695   FY 1695   FY 1695   FY 2001   Court to Thousenorth	BUDGET ACTIVITY 5 Engineering And Manufacturing De	evelopme	<b>1</b>	PE NU 060	JABER AND 1	inte Smd, Cntr	1, Comm	System	s Engr De		ROJECT <b>098</b>
1216   16   16   16   17   15   15   15   15   15   15   15	COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1986 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
Page 9 of 16 Pages   Ex 1996   Ex 1998   Ex 1999   Ex 2000   Ex 2001   Complements	Tactical Radio Accessories	1218	0	<b>8</b>	567	287	587	0	0		
FY 1994   FY 1995   FY 1996   FY 1997   FY 1998   FY 1999   FY 2001   Control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control o	C. Other Program Funding Summary										
FY 1994 FY 1995 FY 1996 FY 1997 S A 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 4 1 2 3 3 3 4 1 2 3 3 3 4 1 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	ARMY, OPA2 B03200		FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000 18493	FY 2001 15214	To Compl 30000	Cost 63708
nent Contract  98  Nent Contract  Page 9 of 16 Pages  Exhibit R-3	D. Schedule Profik			6	V 1004		2	¥		700	
nent Contract 98  Page 9 of 16 Pages Exhibit R-3	CSEL Program			1 5	3	4	2		-	2 3	4
nent Contract 98  Page 9 of 16 Pages Exhibit R-3	Milestone II			≺				×			
Pare 9 of 16 Pares Exhibit R-3	Award NDI Development Contract Conduct IOT&E - FY 98							ļ		×	
Exhibit R-3	Milestone III - FY 99										
Exhibit R-3											
Exhibit R-3											
Exhibit R-3											
Exhibit R-3											
Exhibit R-3											
Exhibit R-3											
Exhibit R-3											
				Poge 0 of 16	S Proces				1 1 1 1 1 1 1 1	~	
				1000	224						

903

OGRAM ELEMENT/PROJECT	COSTBR	BREAKDOWN (R-3)	WN (R.			DATE		
вирсет Астилту 5 Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604805A Cmd	AND TITLE	Cntrl, Cor	THE Comm Systems Engr Dev	ns Engr (	JOSA ABO . DO . 909.	PROJECT D098
A. Project Cost Breakdown								
Contractor Engineering Support Total	FY 1994 1218 1218	Ā	FY 1995 0	FY 1996 195 195	FY 1997 597 597	<b>515</b> 5		
B. Budget Acquisition History and Planning Information								
Performing Organizations Contractor or Contract								
Method/Type Award or Perfor or Funding Obligation Ac		Total Prior to					Budget to	Total
<u>ny</u> uct Developmen	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
TBD Jun 96 TBD Jun 96 TBD Support and Management Organizations: None Test and Evaluation Organizations: None Government Furnished Property, NA	TBD				195	597	1204	19%
VIII (112do 1 pagement victoria)								
Subtotal Product Development Subtotal Support and Management		1775	1218		195	597	1204	4989
John Project		1775	1218		195	297	1204	4989
								<del></del>
	Page 10	Page 10 of 16 Pages				Exhibit R-3	-3	
		904						Item 99

RDT&E PROGRAM ELEME	MENT/F	NT/PROJECT	T COST	r BREA	COST BREAKDOWN (R-3)	I (R-3)		DATE Fe	February 1995	395
BUDGET ACTIVITY  5 Engineering And Manufacturing Develo	velopment	ıţ	PE NU 060	PE NUMBER AND TITLE 0604805A CMd	ਮਸਸਦ Cmd, Cntrl, Comm Systems Engr Dev	1, Comm	Systems	s Engr D		PROJECT <b>D282</b>
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Eathmata	FY 1967 Estimate	FY 1998 Estimato	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
SINCGARS-V Engineering Development	1712	83	2827	7280	0	0	0	0	0	
C. Other Program Funding Summary									کے	Tretal
RDTE, A Budget Activity 5	FY 1994 1218	FY 1995	FY 1996 195	FY 1997 597	FY 1998 597	FY 1999 597	FY 2000 0	FY 2001	Compl	S
PE 0604805 A Project D098 Army OPA2, SSN: B00500 Army OPA2, SSN: J30500	314121 20616	330214 20818	284098 12580	217863 12603	184951 0	131212	153932 0	164072 0	00	Cont
D. Schedule Profile	FY 1994 2 3	•	 	Y 1995 3	<b>-</b>	FY 1996 2 3	δ ω 4	-	FY 19 <i>97</i> 2 3	4
ECP Cut In to Ground Production Award Airborne SIP Development Contract ECP Cut In to Airborne Production Complete Design Feasibility Study on Half Size radio			××	××	×	*				
Award Half-Size Development Contracts					×					
			Page 11 of 16 Pages	16 Pages				Exhibit R-3	-3	

Item 99

RDT&E PROGRAM ELEMENT/PROJ	GRAM EL	EMENT/P	ECT	COST BR	BREAKDOWN (R-3)	WN (R-3	=		DATE	February 1995	
BUDGET ACTIVITY  5 Engineering And Manufacturing Develor	And Manufa	acturing De	evelopment		PE NUMBER AND TITLE 0604805A Cmd		Cntrl, Con	Cntrl, Comm Systems Engr Dev	ns Engr [		PROJECT D282
A. Project Cost Breakdown	cakdown										
Contractor Engineering Support Developmental Test & Evaluation Total	ring Support & Evaluation			FY 1994 1686 26 1712	È	FY 1995 4435 100 4535	FY 1996 7393 0 7393	FY 1997 6780 500 7280			
B. Budget Acquisition History and Planning Information	tion History and	d Planning Inf	orm ation								
Performing Organizations	zations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	Obligation	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
reduct Development Organizations	ent Organizatio		i	;							
III Ft Wayne, IN	SSCPFF	2 to 1	OBT	4941		1686	1255	1000	1000		4941
GD, Tallassee, FL	SS/CPFF	Dec 94	TBD	7213	•		300	3415	3408	0	7123
III FI WAYING, IN	SACE I	ck urr	OSI	8365	9		2880	2978	2372	0	8230
Support and Management Organizations: None	gement Organi	zations: None									
Test and Evaluation Organizations	n Organization										
White Sands, NM	MIPR	Nov 94				76					26
EPG, MD	MIPR	TBD					100		200		009
Government Furnished Property: N/A	shed Property:	N/A									3
Subtotal Product Development	velopment					1686	4435	7101	6780		70707
Subtotal Support and Management	1 Management								3		+6707
Subtotal Test and Evaluation	raluation					26	100		200		909
Total Project						1712	4535	7393	7280		20920
				Page	Page 12 of 16 Pages	S			Exhibit R-3	1-3	
					906						Item 99

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	MENT/	PROJEC	T COS	T BREA	KDOWN	4 (R-3)		DATE Fet	February 1995	98
BUDGET ACTIVITY  5 Engineering And Manufacturing Development	evelopme	3nt	PE NL 060	PE NUMBER AND TITLE 0604805A Cmd	inte Smd, Cnti	ղ, Comm	System	PENUMBER AND TITLE O604805A Cmd, Cntrl, Comm Systems Engr Dev		Р <b>ROJECT</b> <b>D485</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
C4i Interoperability Standardization and Certification	0	92	897	864	<b>104</b>	498	0	0	Continuing	

C. Other Program Funding Summary: There are no other related RDT&E or . ther Appropriation efforts.

D. Schedule Profile: The efforts funded are non-system specific, therefore no Milestones are provided.

Page 13 of 16 Pages 907

Item 9

OGRAM ELEMENT/PROJ	ECT COST BREAKDOWN (R-3)	-3)	DATE Februa	February 1995
BUDGET ACTIVITY  5 Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604805A Cmd	I, Cntrl, Com	PE NUMBER AND TITLE 0604805A Cmd, Cntrl, Comm Systems Engr Dev	PROJECT D485
A. Project Cost Breakdown		)	200	
Government Engineering Support Total	78	498 498	498 498	
B. Budzet Acquisition History and Planning Information: N/A				
	Page 14 of 16 Pages		Exhibit R-3	
	806			Item 99

RDT&E PROGRAM ELEME		ROJEC	T COS	T PREA	NT/PROJECT COST PREAKDOWN (R-3)	I (R-3)		DATE Fe	February 1995	26
BUDSET ACTIVITY 5 Engineering And Manufacturing Development	evelopme	nt	PE NI 060	PE NUMBER AND TITLE 06048U5A Cmd	STITLE Cmd, Cntrl, Comm Systems Engr Dev	1, Comm	System	s Engr De		PROJECT D488
COST (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1998 Estimate	FY 1997 Est mate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Tactical Net Radio Communications	4207	4774	3564	388	3862	4052	0	0	Continuing	
C. Other Program Funding Summary: OPA2, SSN BA1205	FY 1994	FY 1995	FY 1996 24803	FY 1997 32885	FY 1998 27013	FY 1999 0	FY 2000 0	FY 2001 0	Compt 0	Total Cost 84701
D. Schedule Profile	FY 1994	•	<u> </u>	FY 1995		FY 1996	<b>9</b>		FY 1997	
FH MUX J&A Approved FH MUX AP Approved DT&E COMPLETE FT MUX OT Complete N ilestone III - FH MUX Delivery FH MUX PPQ Units FT MUX Production Award	^ <b>* *</b>	• *	, *	~ ×	<b>→</b>	n ×	ω × •	-	۳ ۳	4
			Pare 15 of 16 Pares	6 Pages				Exhibit R-3	<b></b>	
		-3	909 UNCLASSIFIED	SIFIED						Item 99

RDT&E PROGRAM ELEMENT/PROJECT COST	T BREAKDOWN (R-3)	7-3)	DATE	February 1995
eubger Activity 5 Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604805A Cmd	E d, Cntrl, Comr	איזורנ Cmd, Cntrl, Comm Systems Engr Dev	PROJECT D488
A. Project Cost Breakdown		) oo i		
	2798 FY 1995 2798 4035	FY 1996	FY 1997	
Ancillary Hardware Development  Developmental Test and Evaluation		894	1036	
Operational Test and Evaluation	007 SSS	1240	1323	
Government Engineering Support		787	925	
Research Support Equipment Acquisition	<b>%</b> %			
Training	59 4	214	148	
Miscellaneous	255	429	259	
Total	4207 4774	3564	3691	
	Page 16 of 16 Pages		Exhibit R.2	

910

Item 99

RDT&E BUDGET ITEM	EM JUS	TIFICAL	TION SH	IEET (R	JUSTIFICATION SHEET (R-2 Exhibit)	oit)		DATE Fel	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NI 060	PE NUMBER AND TITLE 0604806A NBC Development	E NUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	inse Syst	ems - En	ıgineer		
COET (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	42455	19510	0	0	0	0	0	0	Continuing	Continuing Continuing

Continuing

Continuing

0

0

Ö

0

88

170

200

42285

D020 NBC Contamination Avoidance Systems

D017 NBC Protection Systems

Ö

0

8

NBC Decontamination Systems

**DF97** 

Continuing

Continuing

Continuing

Continuing

protection equipment such as the XM45 Aircrew Protective Mask (ACPM); radiological detection and monitoring equipment; an array of chemical/biological/toxin detection Conduct of the Persian Gulf War: Final Report to Congress, April 1992. Projects provide for development and demonstration testing of individual and collective and warning systems to include the Multi-Purpose Integrated Chemical Agent Detector (MICAD), the XM22 Automatic Chemical Agent Alarm (ACADA), the CB Mass A. Mission Description and Budget Item Justification: U.S. Forces must survive and sustain operations on the Nuclear, Biological and Chemical (NBC) contaminated battlefield. This program element supports the Engineering and Manufacturing Development (EMD) of NBC defensive equipment and addresses various shortcomings Spectrometer (CBMS), and the XM93E1 Fox NBC Reconnaissance Systems (NBCRS); and, finally, decontamination solutions and equipment to replace currently logistically burdensome and time consuming decon methods. The projects in this Program Element support resear h efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

This program was transferred to a Defense Program Element (PE 0604384BP) starting in FY 96 pursuant to Congressional direction in Public Law 103-160, Title XVII.

Project DF97 - NBC Decontamination Systems: Provides EMD of new NBC decontamination solutions and equipment

FY 1994 Accomplishments: No planned program

## FY 1995 Planned Program:

- Continue Sorbent Decon formulation and applicator design (570)
- Initiate/complete Sorbent Decon Engineering Design Test (EDT) (400)
- SBIR/STTR (21)

FY 1996 Planned Program: Program transferred to PE 0604384BP/DF97

911

Page 1 of 14 Pages

#### February 1995 0604806A NBC Defense Systems - Engineer DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE Development 5 - Engineering And Manufacturing Development BUDGET ACTIVITY

FY 1997 Planned Program: Program transferred to PE 0604384BP/DF97

echnology. The AICPS can be integrated into multiple configurations to provide protection to several different tactical systems. Also supports the M40 Mask Pre-Planned Project D017 - NBC Protection Systems: Provides EMD of equipment to protect soldiers on NBC contaminated battlefields. The project resources development of the NM45 Aircrew Protective Mask (ACPM) which provides rotary-wing air crewmen with a less burdensome respiratory protection system. The ACPM eliminates the air erew dependence on forced air and is compatible with helicopter weapon sights and night visi in system. This project also supports the Advanced Integrated Collective Product Improvement and the M20 Collective Protection System Pre-Planned Product Improvement. The ACIPS program is supported by the Counterproliferation Protection System (AICPS) which integrates NBC filtration environmental controls and power source components for combat systems and exploits new filtration Initiative in FY 1995 (PE 0604384BP/CP05)

## FY 1994 Accomplishments:

- M20P3I Contract Closed-Out (60)
- M40P31 Developed Ballistic Protection (110)

## FY 1995 Planned Program:

- AICPS Initiate design configuration testing (769)
  - AICPS Initiate prototype fabrication (1911)
- AICPS Conduct preliminary/critical design reviews. (3900)<sup>1</sup>
  - AICPS Develop prototype filter (300)1
- ACPM Complete Hardware Design and build for Engineering Design Test (EDT), and Preproduction Qualification Test (PPQT) (2880)
  - ACPM Conduct EDT and prepare PPQT test plans, procedures and fixtures (1250)
- ACPM Purchase Technical Data Package (TDP) tooling and develop logistics support (2050)
  - SBIR/STTR (190)

Counterproliferation funding support.

FY 1996 Planned Program: Program transferred to PE 06C4384BP/DO17.

FY 1997 Planned Program: Program transferred to PE 0604384BP/DO17.

chemical defensive equipment to enhance U. S. capability to detect and identify threat agents on the battlefield. The project supports: (1) Automatic Chemical Agent Project D020 - NBC Contamination Avoidance Systems. This project provides for the Engineering and Manufacturing Development (EMD) of new nuclear and

Page 2 of 14 Pages

xhibit R-2

Item 100

#### February 1995 0604806A NBC Defense Systems - Engineer DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE **Development** 5 - Engineering And Manufacturing Development BUDGET ACTIVITY

airborne readings to ground radiation readings and positions, and (6) CB Mass Spectrometer (CBMS) which identifies all chemical and biological agents collected and is a component of the NBCRS and Biological Integrated Detection System (BIDS); and (7) Biological Detector (BD), a point detector for threat biological agents which is also country routes throughout the battlefield, (4) AN/UDR-13 Pocket Radiac Set which provides ground troops with a lightweight, user-friendly tactical device for measuring Detector Alarm (ACADA), which is more sensitive and responsive than current detectors and is capable of concurrent nerve and blister agent detection; (2) Multipurpose and detecting radiation; (5) Advanced Airborne Radiac System (AARS) to provide rapid, accurate, and safe measurement of radiation from the air and for correlating Integrated Chemical Agent Alarm (MICAD) which automates NBC warning and reporting throughout the battlefield and links digital data into the Army's command, sampling equipment integrated into a high speed, wheeled, high mobility armored carrier capable of performing NBC reconnaissance on primary, secondary, or cross control and communications systems; (3) the XM93E1 FOX NBC Reconnaissance System (NBCRS), which is a dedicated system of NBC detection, warning, and a component of the BIDS and is under management of the Joint Program Office for Biological Defense (JPO-BIO).

## FY 1994 Accomplishments:

- ACADA Completed inventory delivery and data item submission on Environmental Technologies Group, Inc. contract (3899)
  - ACAD.\\ Initiated Comparative Testing and Evaluation of ACADA/Non Developmental Item (NDI) (1200)
    - ACADA Conducted Market Survey (810)
- MICAD Conducted Preliminary Design and Review (5000)
- MICAD Conducted Hardware Critical Design and Review (155 >>
- MICAD Conducted Software Design and Phase 1 Review (1597)
- NBCRS Completed Initial Operational Test & Evaluation (IOT&E) (4000)
- NBCRS Completed Pre-Production Qualification Testing (PPQT) (2000)
  - NBCRS Prepared MS III IPR Documentation (100)
- NBCRS Prepared Technical Manuals for IOT&E (3000)
  - NBCRS Performed Failure Analysis (1000)
- NECRS Refurbished systems after Tec. nical Test (TT) in preparation for IOT&E (1200)
  - NBCRS TDP undated and change incorporated (3000)
- NBCRS Finalized logistics provisioning, packaging and manuals (5000)
- NBCRS Conducted configuration control and change management (2825)
- POCKET RADIAC Completed design and fabrication of P-Channel metal oxide semi-conductor field effect transistors (PMSOFT) for prototype (200)
- POCKET RADIAC Prepared test plans and conducted Nuclear Performance Testing (70)
- POCKET RADIAC Conducted test and evaluation of PMSOFT, prototype evaluation and development of alternative dusimetric elements (1223)
  - AARS Designed installation mounts to install AN/VDR-2 with interface board into OH58D helicopter (1752)

Page 3 of 14 Pages

RDT&E BLIDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	gineer
FY 1994 Accomplishments (continued):  AARS - Conducted software development and testing (1109)  PO BIO - Initiated engineering analysis for Bio Detection kit integration and BIDS (1741)	on .nto BIDS (1741)	
FY 1995 Planned Program:  NBCRS · Complete EMD and production planning for Block I upgrade (6575)  NBCRS · Complete MS III IPR Documentation and hold IPR (200)  NBCRS · Conduct Operational MANPRINT Demonstration (800)  ACADA · Close out of Program and Engineering Manufacturing Development Contract (200)  ACADA · Initiate and Conduct Ncn-Development Item (7:DI) Contract (800)  CADA · Initiate and Conduct Ontract and IPR Program Documentation (200)  Pocket Radiac · Conduct Preproduction Qualification Test (PPQT) (450)  Pocket Radiac · Finalize system design after PPQT (50)	: (6575) slopment Contract (200) xt (800) on (200)	
FY 1996 Planned Program: Program transferred to PE 0604384BP/DO20.		
FY 1997 Planned Program: Program transferred to PE 0604384BP/DO20.		
B. Program Change Summary:		
EY 42	994 FY 1995 1839 13474 1839 19510 +16	
a. Keprogrammed into PE (277) b. SBIR/STTR (-661) Current Budget Submit/President's Budget 42455	55 19510	
	Page 4 of 14 Pages	כא זיווא או
	914	Item 100

914

Item 100

RDT&E BUDGET ITEM JU		FICATI	ON SHE	ET (R-2	STIFICATION SHEET (R-2 Exhibit)	<b>a</b>		DATE Fe	February 1995	395
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ent	PE N. 060	PE NUMBER AND TITLE 0604806A NBC Development	PE NUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	inse Syst	tems - En	ngineer		PROJECT DF97
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DF97 NBC Decontamination Systems	0	198	0	0	0	0	0	0	Continuing	Continuing
C. Other Program Funding Summary:										
RDTE, A Budget Activity 2, PE 0602622A, Proj A553, CB Defense & General Investigations	FY 1994 3529	FY 1995 29614	To Compl Cont'd	Total Cost Cont'd						
D. Schedule Profile:	FY 1994		į.	Y 1995		FY 1996	96		FY 1997	
Sorbent Decon - Initiate/Complete Engineering Design Test	2	4	1 2	2 3	4 X	7	4	-	2 3	4
										•
			Page 5 of 14 Pages	1 Pages				Exhibit R-2	-2	
			910							100

RDT&E PROGRAM ELEMENT/PROJECT	NT/PROJECT COST BREAKDOWN (R-3)	OWN (R-3)	DATE	February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	Defense Sy	stems - Engin	neer .	PROJECT <b>DF97</b>
A. Project Cost Breakdown:  Systems Engineering Engineering Design Test SBIR/STTR Total	4 FY 1995 570 400 21 991	FY 1996	FY 1997		
B. Budget Acquisition History and Planning Information: Not Applicable					
Pag	Page 6 of 14 Pages		EX	Exhibit R-3	
	710				Item 100

916

Item 100

RDT&E BUDGET ITEM JI		FICATION	ON SHE	ET (R-2	JSTIFICATION SHEET (R-2 Exhibit)	t)		DATE FeI	February 1995	395
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	evelopment	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604806A NBC Development	PENUMBER AND TITLE OGO4806A NBC Defense Systems - Engineer Development	nse Syst	ems - En	gineer	ā <b>u</b>	РRОЈЕСТ <b>D017</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D017 NBC Protection Systems	170	0908	0	0	0	0	0	0	Continuing	Continuing
C. Other Program Funding Summary:									Ę	Total
RDTE, A Budget Activity 2 PE 0602622A Project	FY 1994 35529	FY 1995 29614	FY 1996 0	FY 1997 0	FY 1998 0	FY 1999 0	FY 2000 0	FY 2001	Compl Cont'd	Cont'd
RDTE, A Budget Activity 4 PE 0603806A Project	6318	1480	0	0	0	0	0	0	Cont'd	Cont'd
RDTE, D Budget Activity 5 PE 0604384BP Project CP05 Counterproliferation Support	0	15200	18800	10700	8500	12500	36500	29500	Cont'd	Cont'd
OPA-3, A Appropriation M97400, M20/M20E1 SCPE SX8001, XM28 NBC TEMPER	1527 4366	0 10236	0 0	00	0 0	0 0	0 0	00	0 0	1527 14602
D. Schedule Profile:  Conduct MSII IPR for ACPM Build EDT Hardware for ACPM Conduct EDT for ACPM Initiate AICPS prototype fabrication Initiate AICPS Engineering Design Test	FY 1994	<b>▼</b> *	- ×	FY 1995 2 3 X X	<b>→</b> × ×					
			Page 7 of 14 Pages	4 Pages				Exhibit R-2	2	

617

RDT&E PROGRAM ELEME	RAM ELE	MENT/PRO	JECT C	OST BE	NT/PROJECT COST BREAKDOWN (R-3)	WN (R-3		DATE Februa	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	facturing [	<b>Jevelopment</b>		PE NUMBER AND TITLE 0604806A NBC Development	AND TITLE  A NBC D  ment	efense S	PENUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	ngineer	PROJECT <b>D017</b>
A. Project Cost Breakdown: Government Engineering Support Contractor Engineering Support			FY 1994 110	FY	FY 1995 2005				
Project Management Office Hardware Development					2600				
Software Development ILS Technical Pote					225				
Testing					52 <b>5</b>				
Design			;		325				
Documentation OA			3		200				
Prototype Fabrication					1161				
Design configuration testing SBIR/STTR					769 190				
Total			170		9050				
B. Budget Acquisition History and Planning Information:	l Planning Inf	ormation:							
Performing Organizations									
	Award or	Performing	Project	Total					
Performing or Funding	Obligation Date	Activity	Office	Prior to	FV 1994	FV 1995	Budget to	Total	
Development			X (iii	1777	1777	277	ANAION	110618111	
СВРСОМ РО		3349	3349	0	170	3179		3349	
Unknown C/FP	Apr 95	3486	3486	0 0	0 0	3486		3486	
lanagen	ions	670	670	>	>	670		670	
Сврсом Ро	Oct 93	720	720	0	0	720		720	
Test and Evaluation Organizations PO	Jun 95	850	850	0	0	850		850	
Government Furnished Property: None	None								
			Page	Page 8 of 14 Pages	Si			Exhibit R-3	
				816					Item 100

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OST BREAKDO	WN (R-3)		DATE February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE  0604806A NBC Defense Systems - Engineer Development	efense Syste	ems - En	gineer	РРОЈЕСТ <b>D017</b>
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to FY 1994 170 170	Buc 7290 7290 720 850 8860*	Budget to Complete	Total Program 7460 720 850	
• Does not include SIBR/STTR (190)					

Page 9 of 14 Pages

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATIC	N SHE	ET (R-2	Exhibit	<b>B</b>		DATE	February 1995	56
BUDGET ACTIVIT ' 5 - Engineering And Manufacturing Development	evelopm	ant	PE N	PE NUMBER AND TITLE 0604806A NBC Development	ITLE IBC Defe of	PENUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	ems - En	gineer	R O	PROJECT D020
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D020 NBC Contamination Avoidance Systems	42285	9768	0	0	0	0	0	0	Continuing	Continuing
C. Other Program Funding Summary:	200	300	o. ∺o	Total						
RDTE, A Budget Activity 4 PE 0603806A Project D601 NBC Contamination Avoidance Systems	21277	FY 1995 8623	Cont'd	Cont.'d						
RDTE, D Budget Activity 7, PE 06073724D, Joint Biological Defense Program		52895		52895						
OPA-3, A Appropriation M98800, ACADA XM22 M93000, BIDS		5455 14583		5455 14583						
D. Schedule Profile:										
	FY 1994	•	ir.,	7 199						
ACADA-Procure NDI Hardware	7	4 ×	7	<b>.</b> 0	4					
ACADA-Initiate Shoot-Off Testing ACADA-Evaluate NDI Candidates		*	* *							
ACADA-MS III IPR TC LRP		;	×							
ACADA-Prepare Acquisition Plan ACADA-Prepare Production Contract		*	>							
ACADA-Award Production Contract			<b>&lt;</b>	×						
ACADA - Conduct Market Survey/Test				×	ì					
MICAD-Preliminary Design Rev	*				<b>&lt;</b>					
		Pt	Page 10 of 14 Pages	4 Pages				Exhibit R-2	2	•
			920							Item 100

RDT&E BUDGET ITEM JUSTIFICATION	JSTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	gineer
FY 1994	FY 1995 2 3 4	
* *		
MICAD-Sample Transfer System Design		
MICAD-Build Prototype Hardware		
XM93E1-Complete IOT&E X*		
XM93E1-IER (UT) XM91E1-MS III IPR		
Contract Award		
\$2		
POCKET RADIAC-Build 1st Prototype X*		
POCKET RADIAC - Conduct PPQT	; ×	
POCKET RADIAC-Complete Dev	<b>≺</b> ≻	
AARS-Critical Design Review X*	•	
te DT/OT Testing	×	
CBMS-Design		
CBMS-Document		
Bio Detector Engineering Analysis		
		•
Dane	Page 11 of 14 Pages	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		באווטון ה-2

921

Item 100

RDT&E PROGRAM ELEME	ZAM ELE		SJECT C	OST BE	NT/PROJECT COST BREAKDOWN (R-3)	WN (R-3		DATE February 1995	ry 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	acturing [	Jevelopment		PE NUMBER AND TITLE 0604806A NBC Development	PE NUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	efense S	ystems -	Engineer	PROJECT D020
A. Project Cost Breakdown:									
			EX 1994	は	FY 1995				
Government Engineering Support			12654		2030				
Contractor Engineering Support			15551		4280				
Project Management Office Support			3907						
Hardware Development			5056		50				
Software Development			2792						
L.S			1368		1215				
Ϋ́O			200						
Technical Data			457						
Testing					1495				
Design									
Document					205				
SBIRVSTTR					194				
TOTAL			42285		9469				
B. Budget Acquisition History and Planning Informat	Planning In	ormation:							
Performing Organizations									
Contractor or	,			,					
Government	Award or Obligation	Performing Activity	Project	Total			Budget to	Total	
Activity	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	Complete	Program	
Product Development Organizations									
DYNA -LSD	Apr 94	102921	102921	84297	14344	4280		102921	
	Feb 94		581	400	181			581	
2	Oct 93		18348	11883	4100	2365		18348	
	Jan 94		1900	700	009	009		1900	
ОМ	Dec 93		175		175			175	
			1500	1500				1500	
СВОСОМ РО	Oct 93	4652	4652	1764	1688	1200		4652	
			Page	Page 12 of 14 Pages	es			Exhibit R-3	
				922					Item 100

922

RDT&E		PROGRAM ELEME	EMENT/PROJECT		COST BR	BREAKDOWN (R-3)	WN (R-3		DATE Febri	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	And Manu	facturing l	Development		PE NUMBER AND TITLE 0604806A NBC Development	AND TITLE  A NBC E	efense S	PE NUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	Engineer	PROJECT <b>D020</b>
Contractor or Government		Award or	Performing	Project	Total					
Performing		Obligation	Activity	Office	Prior to			Budget to	Total	
Activity		Date	EAC	EAC	FY 1994	FY 1994	FY 1995	Complete	Program	
LORAL-LIBRA		Jan 94	13527	13527	71127	6400	0		13527	
MISC	PO/MIPR		534	534	466	89	0		534	
ETG	SS, CPIF	Jan 94		30210	30210				30210	
Sandia Labs	MIPR	Mar 94		210		200	10		210	
Modern Tech Corp	FFP	May 94	332	332		332			332	
_	FFP	Mar 94	65	99		25	40		65	
li- Textron	CPFF	Mar 94	1922	1922		1922			1922	
	MIPR	Dec 93	207	207		207			207	
NAVSEA	MIPR	Apr 94	116	110		110			110	
Support and Management Organizations	nent Organizat	tions								
MISC	8			16950	11800	5150			16950	
Σ	8	Oct 96		14947				14947	14947	
WC WC	2	Dec 93	1554	1554		1554			1554	
	8	Jan 94		36		9	30		36	
	SS/CPFF	Jan 94	426	426		426			426	
	MIPR	May 94	322	322		322			322	
	MIPR	Jul 94	223	223		223			223	
em School	MIPR	Jul 94	274	274		274			274	
JPO-BD	PO	Oct 93		579		579			579	
valuation (	Organizations									
FT HOOD	MIPR	May 94		1750		1750			1750	
ТЕСОМ	P0	May 94		6322	3923	1649	750		6322	
Government Furnished Property: None	ed Property:	None								
	-									
				Page	Page 13 of 14 Pages	Sa			Exhibit R-3	

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	OST BR	EAKDO	WN (R-3		DATE Febru	February 1995	
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604806A NBC Development	AND TITLE A NBC D ment	efense Sy	PE NUMBER AND TITLE 0604806A NBC Defense Systems - Engineer Development	ingineer	PROJECT D020	
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	138347 3923 154070	FY 1994 30352 8534 3399 42285	FY 1995 8495 30 750 9275*	Budget to Complete 14947	Total Program 177194 35311 8072 220577		
*Does not include SIBR/STTR (194)	Page 14 of 14 Pages				Exhibit R-3		
	924					Item 100	90

	RDT&E BUDGET ITEM	_	<b>FIFICAT</b>	ION SH	IEET (R	JUSTIFICATION SHEET (R-2 Exhibit)	it		DATE Fe	February 1995	195
800G	BUDGET ACTIVITY 5 - Engi∩eering And Manufacturing Deve	evelopment	ent	PE NU 060	PE NUMBER AND TITLE 0604807A Med	ritle fed Mati/	FENUMBER AND TITLE OG04807A Med Matl/Med Bio Def Equip Engr Dev	Def Equi	p Engr D	)ev	
	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	i-Y 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	15865	12363	4738	4961	5166	5280	6707	76997	Continuing	Continuing
D812	Military Human Immunodeficiency Virus (HIV) Vaccine and Drug-Engineering Development	6205	6362	199	86	83	88	986	1986	Continuing	Continuing
D832	D832 Combat Medical Materiel-Engineering Development	2282	1595	1590	1754	1785	1921	1909	1906	Continuing	Continuing
D834	Soldier System Protection-Engineering Development	306	0	100	915	<b>9</b> 8	862	958	<b>3</b> 8	Continuing	Continuing
D847	D847 Medical Biological Defense-Engineering Development	1278	0	0	0	0	0	0	0	0	1278
0848	D848 Medical Chemical Defense Life Support Material	1074	52	0	0	0	0	0	0	0	1126
0846	D849 Infectious Disease Erug and Vaccine-Engineering Development	4220	4360	2048	2083	2123	2108	1844	1841	Continuing	Continuing

Starting in FY 1996, funding has been consolidated into PE 0605384BP in accordance with P.L. 103-160.

Medical Research and Materiel Command The projects in this Program Element support research efforts in the engineering and manufacturing development phase of the foreign medical materiel may be procured for exploitation of advanced technology and development to meet Army medical defense goals. This program element supports protective masks, environmental health monitoring equipment, and medical water quality monitoring equipment. This program is primarily managed by the U.S. Anny the full-scale development of vaccines, prophylactic and therapeutic drugs, resuscitation fluids and drug products, rapid identification and diagnostic systems, arthropod chemical and biological defense medical research and development efforts (project D848) have been consolidated into PE 0605384BP in accordance with P.L. 103-160. essential to counteracting lethal and human performance degrading effects of chemical threats, inferious diseases and medical equipment essential to meeting medical requirements on the integrated battlefield with emphasis on deceased size/weight and high mobility, ye supporting large numbers of combat casualties. Additionally, A. Mission Description and Budget Item Justification: This engineering and manufacturing development program funds improved medical equipment and drugs physiological, psychological or environmental factors which degrade physical performance. This includes engineering development of vision corrective devices for Additionally, the program element funds engineering and manufacturing development of medical equipment which provides measurement of or protection against vector repellent systems for the prevention of naturally occurring diseases, and Acquired Immune Deficiency Syndrome (AIDS). Starting in FY 1996, funding for acquisition cycle and are therefore correctly placed in Budget Activity 5.

Page 1 of 18 Pages

Exhibit R-2

5

## February 1995 0604807A Med Matl/Med Bio Def Equip Engr Dev RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 5 - Engineering And Manufacturing Development BUDGET ACTIVIT

testing and education/training materials. Efforts are directed to answer militarily unique needs affecting manning, mobilization and deployment. The major contractor is militarily relevant HIV medical countermeasures. This provides for engineering and manufacturing of sufficient candidate vaccines and drugs to permit large-scale field Project D812-Military Human Immunodeficiency Virus (HIV) Vaccine and Drug-Engineering Development: This project funds Congressionally mandated Henry M. Jackson Foundation for the Advancement of Military Medicine., Rockville, MD.

## FY 1994 Accomplishments:

Evaluated vaccines to treat or protect against HIV. (6205)

## FY 1995 Planned Program:

- Evaluate vaccines to treat or protect against HIV. (6219)
- Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Incovation Research program Reauthorization Act of 1992. (133)

## FY 1996 Planned Program:

Evaluate vaccines to treat or protect against HIV (199)

## FY 1997 Planned Program:

Evaluate vaccines to treat or protect against HIV. (199)

medical materiel essential for combat casualty care to reduce logistical support requirements and minimize losses from duty rates. The major contractor is the Ohmeda Project D\$32-Combat Medical Materiel-Engineering Development: This project supports engineering and manufacturing development to field new and improved Corp., Chicago, IL.

## FY 1994 Accomplishments:

- Completed contract for a portable sterile water for injection system. (2395)
  - Completed study for fielding commercial liquid oxygen generators. (134)
    - Evaluated human efficacy data of Hypertonic Saline Dextran. (53)

## FY 1995 Planned Program:

- Reevaluate data and submit to FDA a New Drug Application for Hypertonic Saline Dextran. (32)
  - Contract for prototype armored ambulance medical interior concepts. (1144)
- Conduct user testing of field medical oxygen generation and distribution system. (287)
- Support the engineering development and user evaluation of telemedicine hardware and concepts for the treatment of combat casualties. (98)
- Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research program Reauthorization Act of 1992. (34)

Page 2 of 18 Pages

Exhibit R-2

tem 101

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)	February 199
BUDGET ACTIVITY	PE NUMBER AND TITLE	201 (100)
5 - Engineering And Manufacturing Development	0604807A Med Matl/Med Bio Def Equip Engr Dev	ngr Dev
FV 1996 Planned Program:		

- Conduct milestone 3 in-Process Review of Hypertonic Saline Dextran. (124)
- Fabricate armored ambulance prototype and prepare specifications. (758)
- Monitor field medical oxygen generation and distribution system production contract. (58)
  - Conduct technical and user Taluations of the intraosseous infusion device. (353)
- Support the engineering development and user evaluation of telemedicine hardware and concepts for the treatment of combat casualties. (298)

#### 1997 Planned Program: 7

- Conduct additional clinical trials and submit a supplemented New Drug Application for Hypertonic Saline Dextran. (189)
  - Monitor field medical oxygen generation and distribution system production and fielding. (58)
    - Conduct technical and user testing of far forward suction apparatus. (257)
- Support the engineering development and user evaluation of telemedicine hardware and concepts for the treatment of combat casualties. (1250)

Project D834-Soldier System Protection-Engineering Development: This project supports engineering development of preventive medicine materiel, including devices, pharmacologicals and other tools, to provide protection, sustainment, and enhancement of the physiological and psychological capabilities of soldiers in the face of combat operations under all environmental conditions. Focus is on reduction in the incidence of personnel lesses due to preventable disease and non-battle injuries through development of environmental and physiological performance monitors and other preventive medicine countermeasures. A major contractor is Stanford Research Institute, Palo Alto, CA

## FY 1994 Accomplishments:

Provided optometry and engineering support in the design, fabrication and testing of special eyewear incorporated into protective masks. (306)

# FY 1995 Planned Program: Project not funded

## FY 1996 Planned Program:

Provide optometric and engineering support for the development of corrective eyewear for application to other developers responsible for protective masks and aviation life support equipment. (901)

## FY 1997 Planned Program:

Provide optometric and engineering support for the development of corrective eyewear for application to other developers responsible for protective masks and aviation life support equipment. (915)

Page 3 of 18 Pages

Exhibit R-2

Item 101

## February 1995 0604807A Med Matl/Med Bio Def Equip Engr Dev RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE 5 - Engineering And Manufacturing Development

Project D847-Medical Biological Defense-Engineering Development: This project funds exploratory research on the development of vaccines and drugs to provide an effective medical defense against validated biological threat agents including bacteria, toxins, viruses and other agents of biological origin. By employing biotechnology, medical systems will be designed to rapidly identify, diagnose, prevent and treat disease due to exposure to biological threat agents.

## FY 1994 Accomplishments:

- Prepared Product and Establishment License Application for tularemia vaccine. (82)
- Completed development of Human Botulism Immune Globulin for contingencies. (258)
- Tested and evaluated automated systems for rapid diagnosis of biological warfare agent exposure. (938)

FY 1995 Planned Program: Project moved to PE 0208051A, project BD2, Joint Biological Defense-Medical.

FY 1996 Planned Program: Project not funded.

FY 1997 Planned Program: Project not funded.

Project D848-Medical Chemical Defense Life Support Materiel: This project funds the development of medical materiel necessary to field an effective capability for medical defense against chemical agent threats facing U.S. forces in the field.

## FY 1994 Accomplishments:

- Conducted extended stability testing of the medical aerosolized nerve agent antidote, convulsant antidote for nerve agents, and nerve agent pretreatment pyridostigmine. (116)
- Filed New Drug Application for nerve agent pretreatment, pyridostigmine with FDA. (958)

## FY 1995 Planned Program:

- Conduct extended stability testing of the medical aerosolized nerve agent antidote, convulsant antidote for nerve agents, and nerve agent pretreatment pyridostigmine.
- Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research program Reauthorization Act of 1992. (1)

FY 1996 Planned Program: Project movec to DoD PE 0605384BP.

FY 1997 Planned Program: Project moved to DoD PE 0605384BP.

Page 4 of 18 Pages

Exhibit R-2

## February 1995 DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE BUDGET ACTIVIT

5 - Engineering And Manufacturing Development

0604807A Med Matl/Med Bio Def Equip Engr Dev

candidate medical countermeasures to permit large-scale field testing and complete studies required for FDA licensure. Work performed in laboratories and among troop populations is directed to prevention, diagnosis, and treatment of viral, bacterial and parasitic diseases, so as to prevent casualties, sustain operational performance and Project D849-Infectious Diseases Drug and Vaccine-Engineering Development: This project funds engineering and manufacturing development of sufficient minimize deaths and disability of armed forces during military operations.

## FY 1994 Accomplishments:

- Conducted field trial for whole cell/B subunit cholera vaccine. (1191)
- Completed lot trials on Argentine Hemorrhagic Fever vaccine. (255)
- Accelerated immunization schedule for Tick-Borne Encephalitis vaccine (205)
- Conducted challenge study for efficacy of cholera vaccine. (1262)
- Conducted expanded Phase 1 clinical trials of Chikungunya live vaccine. (1307)

## FY 1995 Planned Program:

- Complete Phase 3 field study with cholera vaccine. (645)
- Conduct efficacy study of schistosomal topical antipenetrant. (563)
- Complete field study with whole cell/B subunit cholera vaccine. (1654)
- Perform clinical testing of lyophilized Tick-Borne Encephalitis vaccine. (91)
- Conduct expanded Phase 1/2 trials of Chikungunya live vaccine, Argentina, Hantaan and Rift Valley live vaccines. (693)
  - Complete Phase 3 field study and subrait PLA for Hepatitis A inactive vaccine. (268)
- Support the engineering development and user evaluation of telemedicine hardware and concepts in the prevention, diagnosis and treatment of infectious diseases.
- Funds will be reprogrammed for SBIR/STTR programs in accordance with the Small Business Innovation Research program Reauthorization Act of 1992. (92)

## FY 1996 Planned Program:

- Submit a Product License Application for the whole cell cholera vaccine. (100)
- Conduct field trials of Hantaan, Chikungunya, live Shigella flexneri and Enterotoxigenic E. coli whole cell, and Rift Valley Fever live vaccines. (987)
  - Conduct safety and efficacy tests of the antimalarial drug Azithromycin. (961)

#### 1997 Planned Program: ř

- Conduct field trials of malaria blood stage and Rift Valley Fever vaccines. (1057)
- Conduct safety and efficacy tests of antimalarial drug Azithromycin (1036)

Page 5 of 18 Pages

RDT&E BUDGET ITEM JUSTIFICATI	STIFICATION SHEET (R-2 Exhibit)	-2 Exhibit)		DATE February 1996
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE	O TITLE	PENUMBER AND TITLE  OG04807A Mad Matt/Mad Dio Dot Ecuip Economic	in Face Post
B. Program Change Summary			מי בוס בים	aip Eligi Dev
	됴	FY 1996	FY 1997	
Appropriated Value	9 12389	1594	0/5/	
ropriated Value				
8. SDINO11K (-503)				
Current President's Budget Submit	5 12389	4738	4961	
	Page 6 of 18 Pages			Exhibit R-2
	0.0			[CL mail

Item 101

RDT&E BUDGET ITEM J	M JUST	FICATION	ON SHE	ET (R-2	USTIFICATION SHEET (R-2 Exhibit)	t)		DATE Fet	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NL 060	PE NUMBER AND TITLE 0604807A Med	πτιε Aed Mati/	Med Bio	Def Equi	E NUMBER AND TITLE DE004807A Med Matl/Med Bio Def Equip Engr Dev	_	РРОЈЕСТ <b>D812</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1986 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D812 Military Human Immunodeficiency Virus (HIV) Vaccine and Drug-Engineering Development	9029	6352	199	199	862	867	1998		995 Continuing Continuing	Continuing

C. Other Program Funding Summary. Not Applicable

D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY.

Page 7 of 18 Pages

Cybihit D.0

Item 101

31

RDT&E PR	RDT&E PROGRAM ELEMENT/PROJECT	EMENT/PR	•	SOST BI	REAKDO	COST BREAKDOWN (R-3)		DATE	Eshnian, 400K	200
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	lanufacturing	Developmen		PE NUMBER AN 0604807A	PE NUMBER AND TITLE 0604807A Med I	Aati/Med E	Med Mati/Med Bio Def Equip Engr Dev	uip Engr		PROJECT D812
A. Project Cost Breakdown										
Test & Evaluation			FY 1994 6102		FY 1995 6438	FY 1996	FY 1997	<b>~</b> 1.0		-
Product Development			0		0	80	8			
Total			103 6205		0 6438	300 0	200			
B. Budget Acquisition History and Planning Information	v and Planning In	formation								
Performing Organizations Contractor or										
٠.	Type Award or	Performing	Project	Total						
gui		Activity	Office	Prior to					Budget to	Total
Activity Vehicle Date	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Support and Management Organizations	zations: Nonc Vanizations									
US.AMMDA NA	٧N	Ϋ́	Y.	Z	8	c	~	<	c	-
Contracts NA	Y Y	Y V	YZ.	¥	2	0	o c	<b>-</b>	<b>-</b>	<b>-</b>
8	ıtions					•	•	•	•	5
oratories	<b>V</b>	Y Y	٧Z	Y Y	100	0	0	c	•	=
	NA	Y <sub>N</sub>	Y V	N A	1002	0	0	0	· c	- C
u.	Apr 93	125000	125000	38042	2000	6438	200	<b>700</b>	Cont	S
Foundation Agmt									•	
Subtotal Product Development	rty: None									
Subtotal Support and Management	ient			A'N	103	C	c	C	Č	3000
Subtotal Test and Evaluation				NA NA	6102	6438	200	200		
Total Project				Ν	6205	6438	700	9 2 3 8	Cont	
			ı	,						
			Page 8	Page 8 of 18 Pages	5			Exhibit R-3	-3	
				660						Item 101

932

Item 101

RDT&E BUDGET ITEM J		FICATI	USTIFICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibi	t		DATE Fe	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ient	PE NU 060	PE NUMBER AND TITLE 0604807A Med	ntle Aed Mati/	DITLE Med MatI/Med Bio Def Equip Engr Dev	Def Equi	p Engr D		PROJECT <b>D832</b>
CO: T (in Thousands)	FY 1994 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coat to Complete	Total Cost
D832 Combat Medical Materiel-Engineering Development	2582	1585	1590	1754	1795	1921	1909	1906	Continuing	Continuing
C. Other Program Funding Sunimary: Not Applicable	plicable									
D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY	ental product	s will advan	ce through tl	he various e	vents throug	thout the FY				
-	FY 1994	•	, Fr <	FY 1995	,	FY 1996	96	-	FY 1997	*
Field Medical Oxygen Generation and			-	×	•	•		•		•
Intraosseous Infusion Device MLET 3									×	
			Page 9 of 18 Pages	8 Pages				Exhibit R-2	5	
										101

RDT&E PROGRAM ELEME	BRAM ELI		NT/PROJECT COST BREAKDOWN (R-3)	OST BF	REAKDO	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel	ufacturing	Development	ţ	PE NUMBER AND TITLE 0604807A Med	AND TITLE	TITLE Med Matl/Med Bio Def	3io Def Eq	Equip Engr Dev		PROJECT <b>D832</b>
A. Project Cost Breakdown				1						
Test and Evaluation			FY 1994 1034		FY 1995 4	FY 19% 60	FY 1997			
Product Development Program Management			995 575		1398 216	1324 214	1488 270			
lotal  B. Budget Acquisition History and Planning Information	nd Planning In	formation	2604		1618	1598	1763			
Organiz										
<b>*</b> -		Performing	Project	Total						
Performing or Funding Activity	Obligation Date	Activity FAC	Office	Prior to	FV 1004	1008	2001 72	700	Budget to	Total
Developmen	lons	<b>X</b>	Z V	1000	1 1 1224	L 1772	r 1 1990	r 199/	Complete	Program
Contracts	۷ ۲	ΥX	NA	NA	995	1398	1324	1488	Cont	Cont
Support and Management Organizations USAMMDA NA NA	lizations NA	7	<b>A</b> 2	Ą	75	133	8	601	į	Ç
Contracts NA		Y Z	Y V	Ž	30.	84	115	<u>8</u>	38	
Test and Evaluation Organizations		;	•	,						
Army Laboratories NA	Y .	¢ Z	Y Y	Ϋ́	1034	4	09	δ.	Cont	Cont
Subtotal Product Development	Sone:			Ž	\$66	1308	1224	1488	<b>,</b>	
Subtotal Support and Management				NA NA	575	216	214	270	1 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 10 to 1	
Subtotal Test and Evaluation Total Project				Y X	1034	4	9	so.	Cont	Cont
			Page	Page 10 of 18 Pages	ي			Exhibit R-3	~	

934

Item 101

RDT&E BUDGET ITEM J	M JUST	FICATI	ON SHE	ET (R-2	USTIFICATION SHEET (R-2 Exhibit)			DATE Fet	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Jevelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604807A Med	DE04807A Med Matl/Med Bio Def Equip Engr Dev	Med Bio	Def Equi	p Engr D		РРОЈЕСТ <b>D834</b>
COST (in Thousands)	FY 1984 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D834 Soldier System Protection-Engineering Development	306	0	801	915	950	862	998	<b>3</b> 0	Continuing	866 Continuing Continuing

C. Other Program Funding Summary. Not Applicable

D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY

Page 11 of 18 Pages

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ELEMENT	I/PROJ	ECT C	OST BE	REAKDO	WN (R-3		DATE F.	February 1995	1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	ing Develor	ment		PE NUMBER AND TITLE 0504807A Med	AND TITLE	fati/Med E	PENUMBER AND TITLE 0504807A Med Matl/Med Bio Def Equip Engr Dev	uip Engr		PROJECT <b>D834</b>
A. Project Cost Breakdown			7001		300	300				
Test & Evaluation			0		0	0	1997 0			
Product Development			10		0 (	885	668			
Total			306		00	% 50 % 50 % 50 % 50 % 50 % 50 % 50 % 50	21 920			
B. Budget Acquisition History and Planning Information	ing Information	_								
Organiz										
Contractor or Contract  Government Method/Type Award or	l or Performing		Project	Total						
ing or Funding	Ac		Office	Prior to					Budget to	Total
Activity   Vehicle   Date   Product Development Organizations	回	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Contracts NA NA	_	Y.	Y Y	X A	10	0	885	899	Cont	Cont
Management Organiza	•		į							
USAMMUA NA NA NA LEST AND LEST AND Exelections: None		¥z	¥ Z	¥ Z	2%	0	70	21	Cont	Cont
Government Furnished Property: None										
Subtotal Product Development				X	10	0	885	8	Cont	Cont
Subtotal Support and Management				Ϋ́	736	0	20	21	Cont	Cont
Subtotal Test and Evaluation				۲	0	0	0	0	Cont	Cont
Total Project				X V	306	0	902	920	Cont	Cont
			Page 1	Page 12 of 18 Pages	Ķ			Exhibit R-3	<b>6</b>	

Item 101

?

RDT&E BUDGET ITEM JU	M JUST	FICATI	ON SHE	ET (R-2	ISTIFICATION SHEET (R-2 Exhibit)	t)	,	DATE Fel	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ent	PE NI 060	PE NUMBER AND TITLE 0604807A Med	PENUMBER AND TITLE 0604807A Med Matl/Med Bio Def Equip Engr Dev	Med Bio	Def Equi	p Engr D		PROJECT D847
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D847 Medical Blotogical Defense-Engineering Pevelopment	1278	0	0	0	0	0	0	0		

C. Other Program Funding Summary. Not Applicable

D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY.

Page 13 of 18 Pages 937

Item 101

RDT&E PROGRAM ELEME	RAM ELE		NT/PROJECT COST BREAKDOWN (R-3)	OST BF	REAKDO	WN (R-3		DATE F	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	facturing l	Development		PE NUMBER AND TITLE 0604807A Med	AND TITLE	lati/Med B	Ned Matl/Med Bio Def Equip Engr Dev	uip Engr I	1	PROJECT D847
A. Project Cost Breakdown			79	ì	FV 1005	1007	, AG	_		
Test & Evaluation			20		C C	0	rr 1997	~! ~		
Product Development Project Management			976 89		00	00	00			7 11 11
Total			887		o o	0	•			
B. Budget Acquisition History and Planning Informati	d Planning Inf	<u>formation</u>								
Organiz										
Contractor or Contract  Government Method/Type	Award or	Performing	Project	Total						
	Obligation	Activity	Office	Prior to					Budget to	Total
Activity Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
evelopmer	88	***	;	5	Č	(	(	•	•	(
Conuacts	٧ <del>.</del>	₹ Z	<b>₹</b>	<b>€</b> Z	2	<b>&gt;</b>	•	<b>5</b>	<b>&gt;</b>	0
USAMMDA NAMESCANCIA OF SALLARIORS	NA NA	Ž	¥Z	Ž	63	0	0	C	C	c
	¥Z.	Y'X	¥ Z	Y	*	0	0	0	0	0
Test and Evaluation Organizations	•									
Army Laboratories NA	NA V	¥Z	٧X	Y Y	20	0	0	0	0	0
Government Furnished Property: None	None			;		•	,			
Subtotal Froduct Development				¥;	770	0	0	0	0	0
Subtotal Support and Management Subtotal Test and Evaluation				<b>∀</b> ₹ Z Z	۶ ۶	0 0	0 6	0 6	0 6	00
Total Project				Ž	887	0	• •	•	0	00
			Page 1	Page 14 of 18 Pages	es.			Exhibit 13-3	<b>7-3</b>	
				900						Irem 101

938

Item 101

RDT&E BUDGET ITEM JU	M JUST	FICATI	ON SHE	ET (R-	JSTIFICATION SHEET (R-2 Exhibit)			DATE	February 1995	295
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develo	Developm	pment	PE NI 060	PE NUMBER AND TITLE 0604807A Med	PE NUMBER AND TITLE 0604807A Med Matl/Med Bio Def Equip Engr Dev	Med Bio	Def Equi	p Engr D		PROJECT D848
COST (in Thousends)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D848 Medical Chemical Defense Life Support Materiel	1074	52	0	0	0	0	0	0	0	0
Other Description of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Property of the Prope										

C. Other Program Funding Summary. Not Applicable

D. Schedule Profile: Multiple medical developmental products will advance through the various events throughout the FY.

\_

Page 15 of 18 Pages

Item 101

RDT&E P	ROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT	OJECT	OST BF	REAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	96
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Manu	facturing l	Developmen	<b>.</b>	PE NUMBER AND TITLE 0604807A Med	AND TITLE	אוזונה Med Mati/Med Bio Def Equip Engr Dev	lio Def Eq	uip Engr (	1	PROJECT D848
A. Project Cost Breakdown	Ħ			2	à	<b>3</b> 00. A	7001				
Test & Evaluation				107		0	0	FY 199/	~! ~		
Product Development				728		0	0	0			
Project Management Total				239 1074		22	<b>0 0</b>	00			
B. Budget Acquisition History and Planning Information	tory and	Planning Inf	ormation								
Performing Organizations											_
_	30	,			,						
Government Method/Type or Funding	Method/Type or Funding	Award or Obligation	Performing Activity	Project	Total Prior to						F
Activity Vehicle	9 21	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	i otal Program
evelopmen	anization	18									
Contracts		¥Z ·	¥Z	¥ Z	<b>∀</b> Z	728	0	0	0	Cont	Cont
Manage	Organiza	ations	;								
YY		<b>∀</b> Z	Y Z	۲X	Y X	211	52		0	Cont	Cont
Contracts		Y Z	<b>∀</b> X	Y Z	<b>∀</b> Z	35	0	0	0	0	0
valuation	izations	;	;	;	;	•	•	•	,		
Contracts	•	۲,	<b>∀</b> Z	¥Z	¥Z	8	0	0	0	Cont	Cont
Government Furnished Property: None	operty:	None			;		•	•	,	;	
Subtotal Circuit Development	int				<b>V V</b>	97/	o <b>;</b>	<b>-</b>	0 (		ج ا ا
Subtotal Test and Evaluation	Scancia				(	107	76	<b>-</b>	0		
Total Project	ł				Y X	1074	\$ 25	• •	• •	Cont	Cont
											<u></u>
				Page	Page 16 of 18 Pages	2,5			Exhibit R-3	-3	
					940						Item 101

RDT&E BUDGET ITEM JU	TSUC M	FICATI	STIFICATION SHEET (R-2 Exhibit)	ET (R-2	Exhibit	٦		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developn	ent	DE-NI	PE-NUMBER AND TITLE 0604807A Med	ritle fed Mati/	DEDUMBER AND TITLE COGO BIO DEFE Equip Engr Dev	Def Equi	p Engr D		PROJECT <b>D849</b>
COST (in Thousands)	FY 1994 Actual	FY 1905 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D849 Infectious Disease Drug and Vaccine-Engineering Development	4220	7380	2048	2083	2123	2108	1844	1841	Continuing	Continuing
C. Other Program Funding Summary. Not Applicable	pplicable									
D. <u>Schedule Profile:</u> Multiple medical developmental products will advance through the various events throughout the FY 19 1995  FY 1995	ental products FY 1994	s will advand	ce through th	the various en	ents through	hout the FY FY 1996	×		FY 1997	
-	7	3 4	1 2	m	4	7	3 4	-	2 3	4
Cholera MLST 3a					×		<b>&gt;</b>			
THE MUST 38						×	<			
Hepatitis A MLST 3					×				>	
Hantaan MLST 3a									<	×
Chrungunya MLS I 3a Shigell flexner MLST 3a							×			
, con										
			Date 17 of 18 Dates	18 Dans				Exhibit R-2	ç	
			941							Item 101

Fe Support and Manufacturing Davelopment   D604807A Med MattiMed Bio Def Equip Engr Dev   D648	RDT&I	F PROG	RDT&E PROGRAM ELEMEI		NT/PROJECT C	OST B	REAKDO	COST BREAKDOWN (R-3)	()	DATE Fe	February 1995	982
Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Control   Cont	BUDGET ACTIVITY 5 - Engineering A	Ind Manu	facturing			PE NUMBEI 060480	RAND TITLE	Wati/Med E	io Def Equ	lip Engr C		ROJECT <b>849</b>
Evaluation 15199 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 1999 FF 19	A. Project Cost Break	down										
Control	Test & Eveluation				FY 1994		2601	7 188 188	FY 1997			
Management   1966   1956   1958   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1959   1	Product Development				1284		1834		0			
Trailing Object Acceletition Elistors and Planning Informations         Project         Total           Trailing Objection Activity Office         Project         Total         EV 1995         EV 1995         EV 1995         EV 1997         Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Contract Cont	Project Management Total				414		256 4691	355 2058				
d or Activity Defice Prior to EAC         FY 1994         FY 1994         FY 1995         FY 1995         FY 1997         Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Prior to Complete Pr	B. Budget Acquisition	History and	Panning In	Cormation								
d or Performing Dation         Project Activity Office Prior to EAC         FV 1994         FY 1994         FY 1995         FY 1995         FY 1995         FY 1995         FY 1995         FY 1996         FY 1995         FY 1996         FY 1996         FY 1997         Complete Prior to Complete Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to Prior to	Zinegri C											
Activity   Office   Prior to		ontract ethod/Type	Award or	Performing	Project	Total						
EAC         EAC         FY 1994         FY 1994         FY 1995         FY 1995         FY 1996         FY 1997         Complete         Property           NA         NA         NA         114         221         295         386         Cont           NA         NA         NA         114         221         295         386         Cont           NA         NA         NA         116         219         308         349         Cont           NA         NA         NA         1347         1102         1137         554         Cont           NA         NA         NA         1347         1102         1137         554         Cont           NA         NA         1284         1834         58         Cont         Cont           NA         NA         1284         1834         58         Cont           NA         1284         1834         58         Cont           NA         2327         2601         1645         1553         Cont           NA         1284         1834         58         Cont         Cont           NA         2327         2601         1645         1553		Funding	Obligation	Activity	OEE	Prior to					Budget to	Total
NA         NA         NA         114         221         295         386         Cont           NA         NA         NA         114         221         295         386         Cont           NA         NA         NA         116         221         295         386         Cont           NA         NA         NA         168         219         308         349         Cont           NA         NA         NA         1347         1102         1137         554         Cont           NA         NA         NA         748         980         200         650         Cont           NA         NA         1284         1834         58         0         Cont           NA         1284         1834         58         0         Cont           NA         2527         2601         1645         1553         Cont           NA         2527         2601         1645         1553         Cont           NA         260         260         260         Cont         Cont	Activity	chicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 19%	FY 1997	Complete	Program
NA         NA         NA         114         221         295         386         Cont           NA         NA         NA         114         221         295         386         Cont           NA         NA         NA         168         219         308         349         Cont           NA         NA         NA         168         219         308         349         Cont           NA         NA         NA         140         102         1137         554         Cont           NA         NA         748         980         200         650         Cont           NA         NA         748         980         200         650         Cont           NA         NA         1284         1834         58         0         Cont           NA         2527         2601         1645         1553         Cont           NA         2527         2601         1645         1553         Cont	Product Development	Organizatio	2 2 2	**	×N	Y.	1364	1637	•	•	č	Č
NA         NA         NA         114         221         295         386         Cont           NA         NA         NA         168         219         308         349         Cont           NA         NA         NA         1347         1102         1137         554         Cont           NA         NA         NA         264         300         0         0         Cont           NA         NA         NA         748         980         200         650         Cont           NA         NA         1284         1834         58         0         Cont           NA         1284         1834         58         0         Cont           NA         144         256         355         550         Cont           NA         184         1645         1553         Cont           NA         2527         2601         1645         1553         Cont           NA         2527         2601         1645         1553         Cont	Support and Manager	A Vent Orvent	rations	\$	<b>S</b>	Ć Ž	<b>*</b> 071	*C01	8	>	5	
NA         NA         NA         168         219         308         349         Cont           NA         NA         NA         168         219         308         349         Cont           NA         NA         NA         1347         1102         1137         554         Cont           NA         NA         NA         748         980         200         650         Cont           NA         NA         NA         1284         1834         58         0         Cont           None         NA         1284         1834         58         550         Cont           NA         1284         1834         58         550         Cont           NA         2527         2601         1645         1553         Cont           NA         2527         2601         1645         1553         Cont	USAMMDA	Y	٧×	YZ	۲	¥	114	221	295	386	S	Cont
NA         NA         NA         168         219         308         349         Cont           NA         NA         NA         1347         1102         1137         554         Cont           NA         NA         NA         1347         1102         1137         554         Cont           NA         NA         NA         264         300         0         0         0         Cont           NA         NA         NA         748         980         200         650         Cont           None         NA         1284         1834         58         0         Cont           NA         414         256         355         550         Cont           NA         2527         2601         1645         1553         Cont           Page 18 of 18 Pages         1569         1645         1553         Cont	Contracts	<u> </u>		Y <sub>N</sub>	٧X	¥X	300	35	8	164	Cont	Cont
NA         NA         NA         168         219         308         349         Cont           NA         NA         NA         1347         1102         1137         554         Cont           NA         NA         NA         264         300         0         0         Cont           NA         NA         748         980         200         650         Cont           None         NA         1284         1834         58         0         Cont           NA         414         256         355         550         Cont           NA         2527         2601         1645         1553         Cont           NA         2527         2601         1645         1553         Cont	Test and Evaluation 0	rganization										
NA         NA         NA         1347         1102         1137         554         Cont           NA         NA         NA         264         300         0         0         Cont           NA         NA         NA         748         980         200         650         Cont           None         NA         1284         1834         58         0         Cont           NA         414         256         355         550         Cont           NA         2527         2601         1645         1553         Cont           NA         2527         2601         1645         1553         Cont		⋖	٧X	٧X	¥z	¥	168	219	308	349	Cont	Court
NA         NA         NA         264         300         0         0         Cont           NA         NA         748         980         200         650         Cont           None         NA         1284         1834         58         0         Cont           NA         414         256         355         550         Cont           NA         2527         2601         1645         1553         Cont           Page 18 of 18 Pages         Exhibit R-3         Exhibit R-3	Ę	₹	٧Z	<b>4</b> Z	Y Z	¥Z	1347	1102	1137	<b>\$</b> 2 <b>4</b>	Cons	Cont
NA NA NA 748 980 200 650 Cont None  NA 1284 1834 58 0 Cont NA 414 256 355 Cont NA 2527 2601 1645 1553 Cont  Page 18 of 18 Pages.  Exhibit R-3				*	*		226	Š	¢	•	Č	(
None  NA 1284 1834 58 0 Cont  NA 414 256 355 550 Cont  NA 2527 2601 1645 1553 Cont  Page 18 of 18 Pages  Exhibit R-3	pratories	<b>€</b> ≮	<b>₹ ₹</b>	₹ <b>₹</b>	ζ <b>ζ</b>	<b>\$ \$</b>	<b>87</b> /	3 S	500 C	9,9	<b>5 5</b>	
NA 1284 1834 58 0 Cont NA 414 256 355 550 Cont NA 2527 2601 1645 1553 Cont Page 18 of 18 Pages. Exhibit R-3	Coverament Furnishe	d Property:	None		ı	•			1	) }		
port and Management         NA         414         256         550         Cont           and Evaluation         NA         2527         2601         1645         1553         Cont           and Evaluation         Page 18 of 18 Pages         Exhibit R-3         Exhibit R-3	Subtotal Product Develo	ypment				¥	1284	1834	58	0	Const	Cont
and Evaluation 1645 1533 Cont.  Page 18 of 18 Pages Exhibit R-3	Subtotal Support and M.	lanagement				Ž	414	2%	355	550	Com	Cont
Pase 18 of 18 Pages	Subtotal Test and Evaluated Total Project	ation				¥X	2527	2601	1645	1553	3	Cont
	<u> </u>											
					Page	18 of 18 Pa	863			Exhibit R	6	

42

Item 101

	RDT&E BUDGET ITEM		TIFICAT	HS NOI	IEET (R	JUSTIFICATION SHEET (R-2 Exhibit)	it)		DATE Fet	February 1995	95
900 <b>9</b>	BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	evelopm	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604808A Lanc Development	PE NUMBER AND TITLE 0604808A Landmine Warfare/Barrier Engineering Development	Warfare	/Barrier I	Engineeri	guj	
! !	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Coet
  i	Total Program Element (PE) Cost	2912	7669	7382	20428	20399	38020	20884	17958	17958 Continuing Continuing	Continuing
3	E016 Mine Systems Engineering Development	2912	6757	5392	5694	0	0	0	0	0	20755
3	C415 Mine Neutralization/Detection	0	832	1990	14735	20399	38020	20884	17958	17958 Continuing Continuing	Continuing

A. Mission Description and Budget Item Justification. This program element (PE) provides for engineering and manufacturing development of mine and countermine systems. The PE provides for the increased tactical effectiveness and responsiveness of landmines by supporting the development of a Minefield Command and Control (MC2) system for the Wide Area Mines (WAM) and improved sensors that increase countermeasure resistance of Volcano mines, which can be dispensed rapidly from supported mine detection and neutralization devices to counter a variety of threat mines, minefields and obstacles necessary for implementing the Army's Countermine helicopters, ground dispensers, artillery systems and tactical aircraft. Project D415, Mine Neutralizamon Detection Engineering Development, is the engineering and Manportable Mine Detector, and a product improvement to the Armored Vehicle Launched Mine Clearing Line Charge (AVLM). It provides a group of mutually manufacturing development for the Airborne Standoff Minefield Detection System (ASTAMIDS), Expressive Standoff Minefield Breacher (SMB) and Close-in Mod rnization Plan.

Project D016 - Mine Systems Engineering Development: Provides for engineering and manufacturing development of Scatterable Mines (FASCAM) and new smart

## FY 1994 Accomplishments:

- Built hardware and completed M87E1 canister Qualification Testing (707)
- Developed corrective actions and built Technical Test (TT) hardware for M87E1 canister (1668)
- Completed Technical Testing for M87E1 canister (537)

## FY 1995 Planned Program:

- Design control unit and communications module for WAM Command & Control (C2) (2408)
  - Design Safe & Arm (S&A) for WAM Command & Control (2100)
- Perform WAM system engineering/integration and modify control electronics (2107)
  - SBIR/STTR (142)

Page I of 9 Pages

Exhibit R-2

Item 102

RDT&E BUDGET ITEM JUSTIFICATION S	JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604808A Landmine Warfare/Barrier Engineering Development	ingineering

## FY 1996 Planned Program:

- Complete radio brassboard design for WAM C2 (1250)
- Complete S&A design and control electronics modifications for WAM C2 (2440)
- Develop software and lab test units for WAM C2 (1702)

## FY 1997 Planned Program:

- Integrate, assemble, test and complete software development for WAM C2 (2220)
  - Conduct field demonstration and engineering verification for WAM C2 (2820)
    - Qualify WAM C2 prototype (654)

Acquisition Strategy: ASTAMIDS - RDTE development with sole source production award to RDTE contractor.

SMB - RDTE development with sole source production award to RDTE contractor.

VMMD - RUTE development with sole source production award to RDTE contractor.

System (AST AMIDS), Explosive Standoff Minefield Breacher (SMB), Close-in Manportable Mine Detector, Vehicle Mounted Mine Detector (VMMD) and a product improvement to the Armored Vehicle Launched MICLIC (AVLM). It provides a group of mutually supported mine detection and neutralization devices to counter a Project D415 - Mine Neutralization/Detection: This project provides engineering and manufacturing development for the Airborne Standoff Minefield Detection variety of threat mines, minefields and obstacles necessary for implementing the Army's Countermine Modernization Plan.

FY 1994 Accomplishments: Project not funded in FY 1994.

## FY 1995 Planned Program:

- Conduct technical/operational testing of mounting device for AVLM (350)
- Prepare Safety Assessment Report and document design of AVLM mounting device (112)
- Reprogram to Anti-Personnel Obstacle Breaching Device to complete TC (450)
  - SBIR/STIR (20)

## FY 1996 Planned Program:

- Award contract and procure test hardware for Interim VMMD (1290)
- Conduct test and evaluation for Interim VMMD (500)
- Conduct Milestone III IPR for Interim VMMD (200)

Page 2 of 9 Pages

**Exhibit R-2** 

Item 102

TACIDITAL MATE TACCIO NOTCO	ON CUEET 10	9-Exhibits		DATE	
FDIGE BODGE! II EM 303 II FICATION SPECT (R-Z EXHIBIT)  BUDGET ACTIVITY  5 - Engineering And Manufacturing Development  Development	PENUMBER AND TITLE 0604808A Land Development	DTITLE Landmine V	Varfare/Barrie	PEET (R-2 EXIIIDIL) PENUMBER AND TITLE  0604808A Landmine Warfare/Barrier Engineering  Development	3
<ul> <li>FY 1997 Planacd Program:</li> <li>Conduct Milestone II IPR for ASTAMIDS (1000)</li> <li>Conduct source selection and initiate engineering development design for ASTAMIDS (9735)</li> <li>Procure long lead sensor and processor components for ASTAMIDS prototypes (4000)</li> </ul>	or ASTAMIDS (9735 ototypes (4000)	(			
B. Program Change Summary					***:
Previous President's Budget Appropriated Value Adjustments to Appropriated Value 45	994 EY 1995 957 7794 957 7689 45	EY 1996 10963	EY 1997 19577		
a. SDIN'S LIN designments (→3)  Current Budget Submit/President's Budget  2912	12 7689	7382	20429		
	Page 3 of 9 Pages			Exhibit R-2	
	945			Item 102	102

RDT&E BUDGET ITEM JU	M JUST	FICATION	ON SHE	ET (R-2	STIFICATION SHEET (R-2 Exhibit)	(3)		DATE Fel	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NI 060 Dev	PENUMBER AND TITLE 0604808A Land Development	ve number and тпте 0604808A Landmine Warfare/Barrier Engineering Development	Warfare	Barrier !	Engineeri		PROJECT D016
COST (in Thousands)	FY 1984 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1989 Estimate	FY 2000 Estimate	FY 2001 Estimate	Coet to Complete	Total Cost
D016 Mina Systems Engineering Development	2912	6757	2362	5684	0	0	0	0	0	20756
C. Other Program Funding Summary									,	F
Ammo, A Appropriation E72190, Volcano XM89 E72195, Volcano M87A1	FY 1994 2466 0	FY 1995 5440 43937	FY 1996 2000	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
OPA 3, A Appropriation G39100/Mine Dispenser M139	15933	16194	953	4273						
RDTE, A Budget Activity 4 0604619A Project D088 Landmine Warfare	23272	33356	31028	18253	18092	19745	22283	22248	25400	213677
D. Schedule Profile	FY 1994	<b>~</b>	- Fr 6	FY 1995	-	FY 19%	<b>7</b> 7	-	FY 1997	-
Complete M87E1 Canister Qualification X*	•	,	•		•	•	•	<b>-</b>	n	÷
Build TT Hardware for M87E1 Canister Complete Technical Tests for M87E1 Design control unit and communications module for WAM Command & Control	*	* *			×					
(C2) Design Safe & Arm (S&A) for WAM C2 Perform WAM system engineering/integration and modify					××					
Common electronics  Complete radio brassboard design for  WAM C3							×			
Complete S&A design and control electronics modifications for WAM C2							×			
			Page 4 of 9 Pages	Paces.				Exhibit R-2	2	
			770							Item 102

Item 102

9 - Engineering And Manufacturing Development 0604080A Landmine Warfare/Barrier Engineering Development PV 1994 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 1995 FV 199	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)		DATE	February 1995	995
T 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4 1 2	BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604808A Landmine W Development	/arfare/Barrie	r Engine	ering	
X X X X X X X X X X X X X X X X X X X		FY 1995 2 3 4 1	FY 1996 2 3 4	-	FY 1997 2 3	4
X X X X X X X X X X X X X X X X X X X	•		^	<u>.</u>		
X X X X X X X X X X X X X X X X X X X	w A.M. C.2 Integrate, assemble test and complete					×
X  Page 5 of 9 Pages  Exhibit R-2	software development for WAM C2					×
Page 5 of 9 Pages	conginering verification for WAM C2					*
Exhibit R-2	CHAPILY WALM CZ PTOTUTYPE					
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
Exhibit R-2						
EXIIDII K-Z	,			1	c C	
	Pag	e 5 of 9 Pages		EXUID	K-7	

947

Item 102

RDT&	E PROG	RDT&E PROGRAM ELEMEN		T/PROJECT COST BREAKDOWN (R-3)	OST BE	REAKDO	WN (R-	<b>≈</b>	DATE	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develo	And Manu	rfacturing	Development	•	PE NUMBER AND TIT 0604808A La Development	PE NUMBER AND TITLE 0604808A Landi Development	mine Warf	DEVELORMER AND TITLE  0604808A Landmine Warfare/Barrier Engineering  Development	r Enginee		PROJECT D016
A. Project Cost Breakdown	kdown										
				EY 1994	百	FY 1995	FY 1996	FY 1997	7		
Hardware Development				1864		5955	4417	4519	ı <b>c</b>		
Test & Evaluation				453		0	300	200	. ~		
Gov't Engineering & Support	noddn			457		200	200	200			
Gov't Program Support				138		991	175	175	<b>~</b>		
Miscellancous - SBIR/STTR (FY 95)   Total	STTR (FY 9.	ଚ		2912		142 6757	5392	5694			
B. Budget Acquisition History and Planning Information	History and	d Planning Inf	<b>Tormation</b>								
Performing Organizations	į										
Contractor or C.	Contract										
	Method/Type	Award or	Performing	Project	Total						
Performing or	or Funding	Obligation	Activity	Office	Prior to					Rudort to	Total
Activity V.	Vehicle		EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	rganizations										
	CPIF	AUG 90	10294	10294	8430	1864					10294
Textron C	CPIF	TBD	14991	14991			5955	4417	4519		14891
Support and Management Organizations	ent Organizat	tions									
ARDEC	,					595	099	675	675		2605
Test and Evaluation Organizations	ganizations					;	•				•
neous	SBIR/STIR	(FY 95)				453	0 2	300	200		1253
							7				741
Subtotal Product Development	opment				8430	1864	5955	4417	4519		25185
Subtotal Support and Management	lanagement					595	099	675	675		2605
Subtotal Test and Evaluation	lation					453		300	200		1253
Subtotal Miscellaneous							142				142
Total Project					8430	2912	6757	5392	\$694		29185
				(					1		
				1.026	Page 6 of y Pages				Exhibit R-3	-3	
					948						Item 102

<b>BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel</b>						(			rebidary 1999	22
	velopment	ent	PE NU 060	PE NUMBER AND TITLE 0604808A Lanc Development	) TITLE Landmine Warfare/Barrier Engineering ent	Warfare/	Barrier E	ngineer		PROJECT <b>D415</b>
COST (in Thousands)	FY 1904 Actual	FY 1985 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1996 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D415 Mine Neutralization/Detection	0	228	1980	14735	20366	38020	20884	17958	Continuing	Continuing
C. Other Program Funding Summary									Ę	Total
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
RUIE, A Budget Activity 5 PE 0603619 Project D606 Countermine/Barrier	15986	23562	32889	17044	7915	\$575	7211	11673	Cont'd	Cont'd
Advanced Development OPA 3, A Appropriation										
M80101, Initial VMMD				6755	9942	1999	11989	11989		23364 23978
R68200, Close-in Manportable Detection								6822		6822
R68000, Standoff Hand Held Detector M79900, Mine Countermeasures, Electronic						3977	3977	13672		7954 13672
D. Schedule Profile	FY 1994	•	£	FY 1995	•	FY 1996		•	FY 1997	•
I Conduct Technical/Operational Testing of	<b>7</b>	<b>~</b>	7	~ ×	<b>-</b>	7	ى 4		2	4
AVLM mounting kit					>					
Award contract and procure test hardware					×					
for Interim VMMD							;			
Conduct test and evaluation for Interim							×			
Conduct Milestone III IPR for Interim							×			
Conduct Milestone II IPR for ASTAMIDS									×	
			Page 7 of 9 Pages	Pages				Exhibit R-2	5	

949

RDT&E BUDGE	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	N SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 · Engineering And Manufacturing Development	turing Development	PE NUMBER AND TITLE 0604808A Landmine Warfare/Barrier Engineering Development	re/Barrier Engineering
	FY 1994	-	1996 FY 1997
Conduct source selection and initiate engineering development design for ASTAMIDS Procure long lead sensor and processor components for ASTAMIDS prototypes			•
ASTAMIDS LRIP IPR ASTAMIDS Milestone III Explosive SMB Milestone III	4Q 99 4Q 00 4Q 01		
		Page 8 of 9 Pages	m tidita S.S.
		050	100 Пет

RDI	RDT&E PROGRAM ELEME	RAM ELE	MENT/PR	NT/PROJECT COST BREAKDOWN (R-3)	OST BF	REAKDO	WN (R-3		DATE F	February 1995	96
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	g And Manu	facturing [	Developmen	ų	PE NUMBER AND TITLE 0604808A Land Development	TAND TITLE  BA Landr  Dment	nine Warfe	PENUMBER AND TITLE 0604808A Landmine Warfare/Barrier Engineering Development	Enginee		PROJECT <b>D415</b>
A. Project Cost Breakdown	reakdown			FY 1994	λ.	FY 1995	FV 1996	FV 1997			
Primary Hardware Development	Development				1	0	1215	10035			
Test and Evaluation  Gove Engineering and Support	nd Summer					350	200 478	0 00.7			
Govt Program Management	agement					130	100	9			
Miscellaneous - SBIR/STTR- (FY 95)   Total	IR/STTR- (FY 9.	જ				20 932	1990	14735			
B. Budget Acquisition History and Planning Information	ition History and	Planning Inf	ormation								
Performing Organizations	izations										
Contractor or	Contract	Amardos	Desforming	Design	F F						
Performing	or Funding	Obligation	Activity		Prior to					Budget to	Total
Cctivity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	<b>EY 1995</b>	EY 19%	FY 1997	Complete	Program
Product L relopment Organizations	nt Organizations										
180	CPIF	TBD	Y/N	Y/Z	0	0	0	0	10035		10035
TBD	CPIF	TBD	N/A	N/A	0	0	0	1215			1215
Support and Management Organizations	gement Organizat	tions		,	,	,					
CECOM			<b>V</b> /X	<b>∀</b> Z	0	0	295	575	4700		5837
Test and Evaluation Organizations TECOM	on Organizations				0	0	350	200	0		550
Miscellaneous	SBIR/STTR	(FY 95)					20				20
Subtotal Product Development	rvelopment							1215	10035		11250
Subtotal Support and Management	id Management						562	575	4700		5837
Subtotal Test and Evaluation	valuation						350	200			550
Subtotal Miscellaneous	sno						20				20
Total Project							932	1990	14735		17657
				Page	Page 0 of 0 Pages	٥			n Chihit C. O	~	
				l ake	2012108				באוומו	2	
					150						Item 102

156

RDT&E BUDGET ITEM	TEM JUS	TIFICAT	HS NOI	IEET (R.	JUSTIFICATION SHEET (R-2 Exhibit)	it)		DATE Fe	February 1995	95
BUDG:TACTIVITY 5 - Engineering And Manufacturing Devel	Development	ent	PE NU 060 Dev	PE NUMBER AND TITLE 0604814A Sens Development	E NUMBER AND TITLE 0604814A Sense And Destroy Armor Engineering Developmeเน	d Destro	y Armor	Engineer	ing	
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to	Total Cost
Tita Program Ewment (PE) Cost	42008	41395	15617	3626	2428	0	0	0	0	944636
22ST SADARM OPEMATIONAL TEST	0	0	0	3626	2428	0	0	0	0	6054
D644 GENER'C SADARM ENGINEERING	42008	41395	16617	0	0	0	0	0	0	938582

Set both and might, in inclement weather and degraded battlefield conditions. SADARM munitions are designed for use against self-propelled howitzers and armored 155 mm bown terreleaded by systems capable of attacking targets well beyond the Forward Line of Troops (FLOT) in a fire-and-forget mode. SADARM will be capable for welles a sequired while providing counterfire, close support, suppression of enemy air defense (SEAD), and interdiction fires. Upon ejection from the 155mm projectile, multimeter wave sensor and an infrared sensor array. If a target is present within the scan area, the tensor detects its presence and fires an explosively formed penetrator can explosive charge forms a ballistically shaped penetrator from a metal liner) into the target. The projects within this Program Element support research efforts in the the subminition deploys and descends toward the ground at a constant velocity and spin rate. The subminition contains a sensing mechanism which is a dual-mode Mission Description and Budget Item Justification: Sense and Destroy Armor (SADARM) munitions will provide an enhanced fire/counterfire capability for engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

Operational Test and Evaluation (IOTE) in FY 98. Operational Testing is conducted under conditions that approximate, as closely as possible, those encountered in actual combat with typical user troops trained to employ the system. OPTFC provides Army leadership with an independent test and evaluation of effectiveness and suitability of Project D2ST - SADARM Operational Test: This project finances the direct costs of planning and conducting operational testing evaluation of the Sense and Destroy the system. Project D2ST is restructured from SSN E66300, Projectile, Artillery. 155mm SADARM, M898, Procurement Ammunition, Army, and is not a new start. Armor (SADARM) munitions by the Operational Test and Evaluation Command (OPTEC). SADARM is an Acquisition Category (ACAT) I system with an initial

FY 1994 Accomplishments: Not applicable

FV 1995 Planned Program: No planned program

FY 1996 Planned Program: No planned program

FY 1997 Planned Program:

Planning and preparation for test during the 5QTR FY 98 IOTE (1804)

Page I of 8 Pages

Item 103

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	I SHEET (R-	2 Exhibit)		DAIE February 1995	1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604814A Sens Development	TITLE Sense And nt	PENUMBER AND TITLE 0604814A Sense And Destroy Armor Engineering Development	r Engineering	
<ul> <li>Planning and preparation for evaluation during the 3QTR FY 98 IOTE (911)</li> <li>Player unit and instrumentation preparation for the 3QTR FY 98 IOTE (911)</li> </ul>	.0				
Project D644 - Generic Sense and Destroy Armor Engineering Development FY 1994 Accomplishments  155mm Engineering/Failure Analysis (19250)  155mm corrective action (8158)  155mm Technical Testing (2100)  Ramp-up prime/reactivate subs/vendors (12500)	-				
<ul> <li>FY 1995 Planned Program:</li> <li>155mm Engineering/corrective action (32626)</li> <li>155mm Technical Performance Testing (3100)</li> <li>Producibility Efforts (4800)</li> <li>Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) decrement (869)</li> </ul>	ansfer (STTR) decr	ement (869)			
FY 1996 Planned Program:  • 155mm Performance Testing (2000)  • Producibility Efforts/Testing (8800)  • Transition to production efforts (5817)					
FY 1997 Planned Program: No planned program					
	FY 1995 72071 41395	FY 1996 88117	FY 1997 0		
b. Keprogrammed into PE (350) c. Congressional Reprogramming (+13600) Current Budget Submit/President's Budget	41395	16617	3626		
Page	Page 2 of 8 Pages			Exhibit R-2	
	953				Item 103

RDT&E BUDGET ITEM JUSTIFICATION	I JUSTIFICATION SHEET (R-2 Exhibit)	DATE
RUNGET ACTIVITY	-	repruary 1995
	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604814A Sense And Destroy Armor Engineering	Engineering
	Development	)
Change Summary Explanation (By Project):		

Project D644 - Sense and Destroy Armor (SADARM)

SADARM Program Plan. Subsequently, a General Officer Steering Committee (GOSC) revalidated the requirement for the SADARM Smart Submunition in the 155mm Funding/Schedule/Technical: Congress reduced the FY 1994 budget from \$42.0M to \$28.5M because of failures in performance testing, requiring a total revision to the Carrier. Successful performance tests were conducted in April 1994.

production of the 155mm SADARM to begin in FY 97. However, after the successful April 94 tests, the GOSC approved going to the ASARC and accelerating initial The FY 1995 PB request for \$88.1M for the FY 96 program was based on a restructured program (approved in Oct 93) that extended EMD by 27 months, with initial production to FY 95. This strategy was subsequently approved by Congress. The ASARC approved FY 95 Low Rate Production in Jan 1995. The Defense Acquisition Board (DAB) is scheduled for March 1995. FY 1995 initial production of 80 SADARM projectiles for \$24.8M. The Full Rate Production decision is scheduled for FY 1998.

The R&D requirement in FY 96 was reduced from \$88.1M to \$16.7M because of the Army's decision not to put the SADARM in the basic MLRS, correction of second order technical issues to improve reliability, and plans to begin initial production in FY 95 (versus FY 97).

Page 3 of 8 Pages

Exhibit R-2

954

UNCLASSIFIED

Item 103

RDT&E BUDGET ITEM JI	TSUC M	FICATI	ON SHE	USTIFICATION SHEET (R-2 Exhibit)	Exhibit			DATE Fet	February 1995	966
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	Development	nent	PE N 060	PE NUMBER AND TITLE  0604814A Sense And Destroy Armor Engineering Development	TITLE Sense And ot	d Destroy	/ Armor I	Engineer		PROJECT D2ST
COST (in Thousands)	FY 1994 Actual	FY.1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2ST SADARM OPERAT JNAL TEST	0	0	0	3626	2428	0	0	0	0	6054
C. Other Program Funding Summary: There are no other related RDT&E or other Appropriation efforts.	re no other re	lated RDT&	E or other	Appropriation	n efforts.					
D. Schedule Profile										
	FY 1994	4	1 F	FY 1995	4	FY 1996	که در 4	_	FY 1997	4
Initiate preparation for 1Q FY 98 IOTE Opn'l Test Readiness Review (1 of 3)	1				,	l			ı	×
			Page 4 of 8 Pages	3 Pages				Exhibit R-2	2	

R	RDT&E PROGRAM ELEMEN	RAM EL		T/PROJECT C	OST BE	REAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	995
BUDGET ACTIVITY  5 - Engineeri	вирбет астилту 5 - Engineering And Manufacturing Develo	ıfacturing	Development		PE NUMBER AND TITLE 0604814A Sens Development	AND TITLE	And Des	PE NUMBER AND TITLE 0604814A Sense And Destroy Armor Engineering Development	r Enginee	•	PROJECT D2ST
A. Project Cost Breakdown Operational Test and Evaluation Total	Breakdown and Evaluation			FY 1994	FY	FY 1995	FY 1996	FY 1997 3626 3626			
B. Budget Acqu	B. Budget Acquisition History and Planning Information	d Planning In	formation								
Performing Organizations Contractor or Contra Government Metho Performing or Fun	anizations Contract Method.Type or Funding Vehicle	Award or Obligation <u>Date</u>	Performing Activity EAC	Project Office EAC	Total Prior to EY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Product Development Organ Support and Management O Test and Evaluation Organiz OPTEC, Alex, VA Government Furnished Prop Subtotal Product Development	Product Development Organizations: N/A Support and Management Organizations: N/A Test and Evaluation Organizations OPTEC, Alex, VA Government Furnished Property: None Subtotal Product Development	ns: N/A zations: N/A s							3626	2428	6054
Subtotal Support and Management Subtotal Test and Evaluation Total Project	and Management Evaluation								3626 3626	2428 2428	6054 6054
				Page	Page 5 of 8 Pages				Exhibit R-3	-3	
					750						103

item 103

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE FeI	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	Development	ent	PE NL 060	PE NUMBER AND TITLE  0604814A Sense And Destroy Armor Engineering Development	ntle Jense And It	d Destro	y Armor I	Engineer		РRОЈЕСТ <b>D644</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D644 GENERIC SADARM ENGINEERING DEVELOPMENT	42008	41395	16617	0	0	0	0	0	0	938582
C. Other Program Funding Summary									F	E
Procurement, Ammunition, Army, SSN E66300, Proj, Arty, 155mm SADARM XM898	FY 1994	FY 1995 24824	FY 1996 24284	<u>FY 1997</u> 62449	EY 1998 72576	FY 1999 82100	FY 2000 90000	FY 2001 90000	10 Compl 2078800	1 otal Cost 2525033
D. Schedule Profile	FY 1994		<u>i.</u> .	FY 1995	•	FY 1996		•	FY 1997	•
Complete Fuze, Safe, and Arm tests ASARC/Type Classify (Low Rate Prod) Defense Acq Board/MSIIIA Initial Verification Testing Award first Low Rate Prod Contract Final Verification Tests Award second Low Rate Prod Contract Producibility Confirmation Firings Conduct Initial Production Test (IPT) IOTE: 4QFY98 MSIII: 1QFY99 Award Full Scale Prod: 2QFY99 IOC: 4QFY99	<b>.</b>	* <b>*</b>	· ×××	<b>,</b>	- •	× ×	• ×	-	· ×	•
			Page 6 of 8 Pages	Pages				Exhibit R-2	Ņ	
										162-103

RDT&E PROGRAM ELEME	SRAM ELE		NT/PROJECT C	OST BI	REAKDO	COST BREAKDOWN (R-3)		DATE	February 1005	900
BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel	ufacturing l	Development		PE NUMBER AND TIT 0604814A Se Development	PE NUMBER AND TITLE 0604814A Sense Development	And Des	Sense And Destroy Armor Engineering	r Enginee		PROJECT D644
A. Project Cost Breakdown										
			FY 1994	F	FY 1995	FY 1996	FY 1997			
Contractor Engineering Support			36109		32800	12200	0			
Government Engineering Support			2724		2670	1700	0			
Program Management Support			1498		1741	1047	0			
Developmental Test and Evaluation			1677		3315	1670	0			
SBIK/SLIK Total			0000		698					
B Budges Acquisition Discour.			42008		41393	1991				
THE PROPERTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF TH										
Performing Organizations										
Contractor or Contract										
	Award or	Performing	Project	Total						
Performing or Funding	-	Activity	Office	Prior to					Dudant	F
Activity	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FV 1006	FV 1007	Complete	lotal
Product Development Organizations	SOC						X	1227	אוואומונה	riogram
Aerojet- Azusa CA C/CPIF	SEP 86	TBD	436830	355721	36109	32800	12200	c	c	016930
>				57453	950	1000	650	· C	<b>&gt;</b>	430830
Alliant Tech Sys- C/CPIF	SEP 86	TBD	188714	188038	0	0	2	o c	<b>S</b>	000033
					•	•	>	>	>	100030
Loral Vought Sys- SS/CPIF	SEP 88	TBD	90535	90535	0	0	0	0	C	90434
Dallas, IX									•	
Support and Management Organizations				7645	0	0	0	0	0	7645
Picatinny Arsenal	24(10113			1100	3330		•	•		
PMO-MLRS,				16851	376	707	139/	0	<b>0</b> (	13574
SADARM, AL				17871	676	=	>	<b>-</b>	0	16266
SBIR/STTR						649				,
Miscellaneous				7118	336	914	350	c	c	800
   Test and Evaluation Organizations	•							•	>	0
	1		Beer	1000				: : :		
			a myc	uke / 0/0 rukes				Exhibit K-3	3	
				958						Item 103

RDT&E PROGRAM ELEMENT/PROJECT		COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE	February 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	ment	PE NUMBER AND TITLE 0604814A Sens Development	AND TITLE  1A Sense oment	And Des	PE NUMBER AND TITLE 0604814A Sense And Destroy Armor Engineering Development	r Enginee	1	PROJECT <b>D644</b>
Contractor or Contract Government MethodType Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC YPG, Yuma, AZ. WSMR, White Sands, N.Mex. Miscellancous Government Furnished Property: None. Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project  Total Project	ng Project ity Office LC EAC	Total Prior to FY 1994 18237 26487 63645 699392 30801 108369 838562	FY 1994 1115 0 785 37059 3049 1900 42008	FY 1995 1040 0 2725 33800 3830 3765 41395	FY 1996 1000 0 112850 1747 2020 16617	FY 1997 0 0 0	Budget to Complete 0 0 0	Total 21392 26487 26487 68175 783101 39427 116054 938582
	Pa	Page 8 of 8 Pages	6			Exhibit R-3	£-3	

RDT&E BUDGET ITEM	•	TIFICAT	HS NOI.	EET (R	JUSTIFICATION SHEET (R-2 Exhibit)	it)		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	Development	ent	PE N∪	PE NUMBER AND TITLE 0604816A LONG	E NUMBER AND TITLE 0604816A Longbow - Engineering Development	- Engine	ering De	velopme	ŧ	
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Val Program Element (PE) Cost	271103	169048	23590	4080	0	0	0	0	0	1736891
DC13 reultre Seeker	105314	34522	0	0	0	0	0	0	0	384022
DC27 Longbow - Engineering Development	79839	22479	0	0	0	0	0	0	0	761795
DC31 Longbow - Apache	85950	88216	9261	0	0	0	0	0	0	548834
DC87 LBA TESS	0	0	14329	4080	0	0	0	0	0	18409
D2DT L3A Operational Test	0	23831	0	0	0	0	0	0	0	23831

System for force-on-force collective training after fielding (and also includes follow-on development of the Longbow Crew Trainer). The projects in this Program Element DC31 encompasses efforts necessary to synchronize the integration of the FCR and RF missile onto the Apache aircraft. It includes two versions of the Longbow Apache missile will effectively engage and destroy advanced threat armor on the digital battlefield will into the next century. Longbow Project DC27 consists of the development AH44D series aircraft: (1) the AH64D with the FCR mission kit plus the upgraded 701C engine, and (2) the AH64D without the FCR mission kit and engine upgrade. effectiveness and aircraft survivability. The weapon system will be employable by day or night, in adverse weather, and in countermeasures environments. The Hellfire of a mant-mounted Fire Control Radar (FCR) for the AH-64; DC13 consists of the development of a radar frequency (RF) missile seeker for the Hellfire missile. Project A. Mission Description and Budget Item Justification: Longbow will provide the AH-64 with a fire-and-forget Hellfire capability, greatly increasing weapon system (TESS) will perform air-to-air and RF missile simulations in addition to the functions of the Multiple Integrated Laser Engagement System/Air to Ground Engagement Project D2DT was previously transferred from support of operational test PE 65712 (Project D001) to fund the direct costs of Initial Operational Test and Evaluation (IOTE) in October 1994 and the Longbow Operation Test in January 1995. Project DC87 is a new start. Longbow Apache Tactical Engagement Simulation System support research efforts in the engineering and manufacturing development phases of the acquisition strategy and are therefore correctly placed in Budget Activity 5.

countermeasures environment against armored targets and air defense systems. Its millimeter wave seeker and inertial measurement system provide a fire-and-forget Project DC13 - Hellfire Seeker: This project develops the Longbow Hellfire, a missile that is capable of being employed day or night, in adverse weather, and in a capability which greatly reduces aircraft exposure time. It uses a Hellfire II warhead system to destroy threat armor projected for early into the 21st century

# FY 1994 Accomplishments:

- Engineering development contract (87664)
- Testing (7221)

- Missile Flight Testing

Page 1 of 18 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION S	JUSTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604816A Longbow - Engineering Development	elopment
<ul> <li>Qualification Testing</li> <li>Electromagnetic Environmental Effect Testing</li> <li>Warhead/Live Fire Testing</li> <li>Countermeasure Testing</li> <li>Program Management Support (10429)</li> </ul>		
<ul> <li>FY 1995 Planned Program:</li> <li>Complete Engineering Development Contract (20994)</li> <li>Testing (4962)</li> <li>Missile Flight Testing</li> <li>Qualification Testing</li> <li>Electromagnetic Environmental Effect Testing</li> <li>Warhead / Live Fire Testing</li> <li>Countermeasure Testing</li> <li>Complete Program Management Support (7841)</li> <li>SBIR/STTR (725)</li> </ul>		
Project DC27 - Longbow Engineering Development: This project consists of a mast-mounted Fire Control Radar (FCR) that will be integrated onto the AH-64 airframe. The FCR integration, along with the Hellfire Seeker (Project DC13) will provide the AH-64 with a fire-and-forget capability, greatly increasing weapon system effectiveness and aircraft survivability. The weapon system will be employable day or night, in adverse weather, and in countermeasures environments. The system will effectively engage and destroy high-value targets including advanced armor on the battlefield well into the next century. To be effective and survive on this future battlefield, the attack helicopter team must rapidly engage multiple targets with minimum exposure time and deploy a system that is inherently resistant to threat countermeasures.	This project consists of a mast-mounted Fire Control Radar (FCR) that will be integrated onto the AH-64 Seeker (Project DC13) will provide the AH-64 with a fire-and-forget capability, greatly increasing weapon system stem will be employable day or night, in adverse weather, and in countermeasures environments. The system will ing advanced armor on the battlefield well into the next century. To be effective and survive on this future ge multiple targets with minimum exposure time and deploy a system that is inherently resistant to threat	tegrated onto the AH-64 reatly increasing weapon system environments. The system will and survive on this future rently resistant to threat
FY 1994 Accomplishments:  • Engineering Development Contract (56202)  - Complete Aircraft Integration  - Complete 1,000 Hour Test, Analyze, and Fix Effort  - Complete FCR Mode Development  - Conduct FCR Specification Verification Tests  - Conduct Government Technical Test  - Conduct Environmental Qualification Tests  - Conduct Environmental Qualification Tests  - In House Support (4195)	Dag 2 of 18 Dags	Exhibit R-2

Item 104

UNCLASSIFIED

961

RDT&E BUDGET ITEM J	USTIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604816A Longbow - Engineering Development	evelopment
<ul> <li>Test Support (6853)</li> <li>Development Testing (3209)</li> <li>Qualification Testing (2550)</li> <li>Live Fire Test and Evaluation (115)</li> <li>Target Support (979)</li> <li>Support Contracts (2589)</li> <li>Technical Support (712)</li> <li>Software Support (653)</li> <li>Logistics Support (825)</li> <li>Planning Support (399)</li> </ul>		
<ul> <li>Engineering Development Contract (15897)</li> <li>Conduct FDTE</li> <li>Complete environmental qualification</li> <li>Award Long Lead Production Contract</li> <li>Complete Systems Test</li> <li>Conduct Functional Configuration Audit</li> <li>Conduct Initial Operar onal Test and Evaluation</li> <li>Complete Development Program</li> <li>In House Support (2986)</li> <li>Test Support - Live Fire Test and Evaluation (430)</li> <li>Support Contracts (2780)</li> <li>Support Contracts (2780)</li> </ul>		
Project DC31 - Longbow Apache: The Longbow program encompasses modifications to the AH-64 Apache as well as upgrades to the aircraft systems for the AH-64D series to efficiently and effectively integrate the FCR and RF missile. The system provides an adverse weather fire-and-forget missile capability that increases the AH-64 lethality and survivability. The Longbow Apache also retains the capability to fire the Semi-Active Laser Hellfire. The greatly improved design enhancements increase operational capability of the crew and provide increased survivability and lethality, while complying with Congressional direction to standardize the fleet to a common configuration.  FY 1994 Accomplishments:  McDonnell Douglas Helicopter Systems (MDHS) Prime Contract (71126)  Page 3 of 18 Pages  Liven 10	Tam encompasses modifications to the AH-64 Apache as well as upgrades to the aircraft systems for the AH-64D RF missile. The system provides an adverse weather fire-and-forget missile capability that increases the AH-64 etains the capability to fire the Semi-Active Laser Hellfire. The greatly improved design enhancements increase survivability and lethality, while complying with Congressional direction to standardize the fleet to a common ime Contract (71126)  Page 3 of 18 Pages  Hom 14	he aircraft systems for the AH-64D apability that increases the AH-64 wed design enhancements increase andardize the fleet to a common Exhibit R-2
	962	ווכווו ווכוו

RDT&E BUDGET ITEM JUSTIFICATION	USTIFICATION SHEET (R-2 Exhibit) DATE Febru	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604816A Longbow - Engineering Development	
<ul> <li>Fabricate Aircraft #5 and #6</li> <li>Electromagnetic Vulnerability / Hazards of Electromagnetic Radiation to Ordnance Test</li> <li>Electromagnetic Compatibility Demonstration</li> <li>Physical Teardown Logistics Demonstration</li> <li>Preliminary Production Qualification Test (PPQT)</li> <li>Improved Data Modem Testing</li> <li>Handling Qualities Testing</li> <li>Software Development</li> <li>Logistics Demonstrations</li> <li>PPQT Pilot Training</li> <li>Force Development Test and Experimentation (FDTE) Maintenance Training</li> <li>Aviation Mission Planning Station Training</li> <li>Programmatic and Technical Support (PATS) Contract (1731)</li> <li>GFE (2000)</li> <li>In House Support (11093)</li> </ul>	Ordnance Test	
FY 1995 Planned Program:  MDHS Prime Contract (70566)  PATS Support Contract (2800)  GFE (1110)  In House Support (11887)  SBIR/STTR (1853)  FY 1996 Planned Program:  MDHS Prime Contract (7754)		
• PATS Support Contracts (1100) • PATS Support Contracts (1100) • PATS Support Contracts (1100) • Project DC87 - LBA TESS: The Tactical Engagement Simulation System (TESS) consists of an "A" Kit and a "B" kit. The Longbow PM will contract with McDonnell Douglas Helicopter Systems to do the provisioning for the "A" Kit, which consists of minimal on-board software for data interface operator control software, wiring, and power source taps for the "B" kit. Validation of the program depends upon completion of the Best Technical Approach. This project is a new start.	S) consists of an "A" Kit and a "B" kit. The Longbow PM will contra of minimal on-board software for data interface operator control softwetion of the Best Technical Approach. This project is a new start.	with McDonnell are, wiring, and

Page 4 of 18 Pages

Start development, fabrication, and integration of the "A" Kit (2000)

FY 1996 Planned Program:

Item 104

Exhibit R-2

...

RDT&E BUDGET ITEM JUSTIF	ICATION	USTIFICATION SHEET (R-2 Exhibit)	2 Exhibit)	DATE February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	r T	PE NUMBER AND TITLE 0604816A LONG	Longbow -	PE NUMBER AND TITLE 0604816A Longbow - Engineering Development	
Start development, fabrication, and integration of the "B" Kit     Continue development of the Longbow Crew Trainer (29)	"B" Kit (12329) (29)				
<ul> <li>FY 1997 Planned Program:</li> <li>Complete integration of the "A" Kit (600)</li> <li>Complete integration of the "B" Kit (3480)</li> </ul>					
Project D2DT - LBA Operational Test: This project finances the direct costs of planning and conducting operational testing and evaluation of the Longbow Apache system by the Operational Test and Evaluation Command (OPTEC). The Longbow Apache is an Acquisition Category I system with an Initial Operational Test and Evaluation (IOTE) in 1995. Operational Testing is conducted under conditions as close as possible to those encountered in actual combat with typical user troops trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system. Proj at D2DT is restructured from PE 0605712A, Support of Operational Testing,	le direct costs of []. The Longbo ler conditions as independent test	planning and co w Apache is an . s close as possibl t and evaluation	onducting operation Cate Acquisition Cate to those encours of effectiveness and	onal testing and evaluation of the Longbow Agory I system with an Initial Operational Test itered in actual combat with typical user troopind suitability of the system. Proj. a D2DT is	pache and s trained
<ul> <li>FY 1995 Planned Program:</li> <li>Longbow Apache IOTE testing (18379)</li> <li>Longbow Apache IOTE evaluation (1367)</li> <li>Player unit support of IOTE (3584)</li> <li>SBIR/STTR (501)</li> </ul>					
B. Program Change Summary Previous President's Budget Appropriated Value	EY 1994 277954 277954	FY 1995 191303 169048	EY 1996 23707	<u>FY 1997</u> 4100	
Adjustments to Appropriated value ( 1 otal PE)  a. SBIR/STTR(-4245)  b. Reprogrammed out of PE (-2406)  Current President's Budget	-6651 271103	169048	23590	4080	
	Page	Page 5 of 18 Pages		Exhibit R-2	

Item 104

RDT&E BUDGET ITEM J		FICATION	ON SHE	USTIFICATION SHEET (R-2 Exhibit)	Exhibit	E C		DATE Fe	February 1995	995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	Developm	ent	PE NI	PE NUMBER AND TITLE 0604816A LONG	TITLE Longbow - Engineering Development	- Engine	ering De	velopme		PROJECT DC13
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estin ate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC13 Helifire Seeker	105314	34522	0	0	0	0	0	0	0	384022
C. Other Program Funding Summary Missile Procurement, Army Hellfire (C70300)	EV 1994 0	FY 1995 41995	EY 1996 197513	EY 1997 262504	<u>FY 1998</u> 280491	FY 1999 302314	FY 2000 304590	<u>FY 2001</u> 311214	To Compl 548400	Total Cost 2249021
D. Schedule Profile	Y 199		<b>[2.</b> ,	r 199		FY 1996			7 199	
Tower Test High Speed Captive Flight Test Missile Firings (Rail-launched) Missile Firings (Helo-launched) Hardware-In-The-Loop Tests System Qualification Tests IOTE Live Fire Tests *Denotes complete effort	<b>~</b>	* *	·	~ × × ×	<del>-</del>	7	<b>v</b>	-	۶ م	4
			Page 6 of 18 Pages	8 Pages				Exhibit R-2	2	
						:				

RDT&E PROGRAM ELEMEI	AM ELE	MENT/PROJECT	JECT C	OST BR	EAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	995
aconer Activity 5 - Engineering And Manufacturing Devel	cturing [	<b>Development</b>		PE NUMBER AND TITLE 0604816A LONG	AND TITLE	ow - Engi	PE NUMBER AND TITLE 0604816A Longbow - Engineering Development	evelopme		PROJECT DC13
A. Project Cost Breakdown Prime Contract Program Management Support SBIR/STTR Total			EY 1994 87664 17650 105314	20 20 11 33	<u>FY 1995</u> 20994 12803 725 34522	FY 1996 0 0	FY 1997 0			
B. Budget Acquisition History and Planning Information	Janning Inf	ormation								
Performing Organizations  Contractor or Contract  Government Method/Type  Performing or Funding Organizations	Award or Obligation <u>Date</u>	Performing Activity <u>FAC</u>	Project Office EAC	Total Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
Longbow Joint SS/CPIF/AF	DEC 90	317801	320310	224831	87664	20994	9	0	0	333489
Marietta and Westinghouse) SBIR/STTR						725				725
Support and Management Organizations Program	tions			19355	10429	7841	0	0	0	37625
Management Support  Test and Evaluation Organizations  Test Activities					7221	4962	0	0	0	12183
Note: EAC shown reflects only contract work definitized to date. Total Program data reflects additional work not yet on contract.  Government Furnished Property - Not Applicable	ract work det lot Applicabl	Initized to date. T	otal Program	data reflecti	s additional v	work not yet o	in contract.			
			Page 7	Page 7 of 18 Pages	<b>6</b>			Exhibit R-3	ဗ္	•
				996						Item 104

RDT&E PROGRAM ELEMENT/PROJECT	CT COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE F	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER 060481	PE NUMBER AND TITLE 0604816A Longbow - Engineering Development	ow - Engi	neering D	evelopme	ent	
	Total						
	Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Subtotal Product Development	224831	87664	21719				334214
Subtotal Support and Management	19355	10429	7841				37625
Subtotal Test and Evaluation  Total Project	244186	7221 105314	4962 34522				12183
	Dans & of 18 Dans	٥			7. 2. 0. 3. 4. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	<b>0</b>	•
	Yan For In Govern	G.					101

296

Item 104

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATION	ON SHE	ET (R-2	Exhibit			DATE Fel	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE NU 000	PE NUMBER AND TITLE 0604816A Long	PE NUMBER AND TITLE 0604816A Longbow - Engineering Development	- Engine	ering De	velopme		PROJECT DC27
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC27 Longbow - Engineering Development	79839	22479	0	0	0	0	0	0	0	761795
C. Other Program Funding Summary  APA - Apache Longbow FCR (AA6608)	FY 1994	FY 1995 0	FY 1996 84679	FY 1997 98984	FY 1998 110321	FY 1999 126136	FY 2000 123395	FY 2001 115873	To Compl 34033	Total Cost 693421
D. Schedule Profile	FY 1994		<u>.</u>	FY 1995	•	FY 1996			FY 1997	
Logistics Demonstrations Logistics Demonstrations FCR Mode Performance Demonstration Technical Test Adverse Weather Test Adverse Weather Test FDTE IOTE Long Lead IPR FCA Long Lead Contract Award *Denotes complete effort	· * * * * * * * * * * * * * * * * * * *	4	· · · · · · · · · · · · · · · · · · ·	~	<del>4</del>	~	<b>√</b>	_	m N	4
			Page 9 of 18 Pages	Pages				Exhibit R-2	2	
			0690							Item 104

896

Itcm 104

RDI	RDT&E PROGRAM ELEME	RAM ELE	MENT/P	NT/PROJECT COST BREAKDOWN (R-3)	SOST BE	REAKDO	WN (R-3		DATE E.	Fahrian, 1996	400
					PE NUMBER AND TITLE	AND TITLE				dan	PROJECT
5 - Engineering And Manufacturing Development	g And Manu	facturing [	Developme	int	0604816A	6A Longt	ow - Eng	Longbow - Engineering Development	evelopm		DC27
A. Project Cost Breakdown	cakdown			FY 1994		FV 1994	FV 1996	FV 1997			
Contractor Engineering & Development	ring & Developi	ment		66202		15897					
Other Government Support	ili Managemeni Support			3525 7523		2986 430					
PATS Contractor Program Support	ogram Support			2589		2780					
SBIR/STTR						386					
Total				79839		22479					
B. Budget Acquisition History and Planning Informa	tion History and	d Planning Inf	ormation								
Performing Organizations	izations										
Contractor or	Contract										
Government	Method/Type	Award or	Performing	Project	Total						
Performing	or Funding	<b>Obligation</b>	Activity	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Organizations	ent Organization	800									
Proof of Principle	SS / CPIF		Contract is	Contract is	396945	0	0	0	0	0	396945
Contract:			Complete	Complete							
Longbow Joint											
Venture (Martin											
Marietta and											
Westinghouse)											
EMD Contract:	SS	DEC 90	330020	331561	251483	66202	15897	0	0	0	333582
Longbow Joint	CPIF / AF										
Venture SBIR/STTR							386				700
Support and Management Organizations	gement Organiz	zations					200				000
Gov't In-House	Varies	Quarterly			3446	4195	2986	0	0	С	10027
PATS Contractors	Varies	Quarterly			4053	2589	2780	0	0	0	9422
Test and Evaluation Organizations	n Organizations										
Test Activities	Varies	Quarterly			3550	6853	430				10833
				Page	Page 10 of 18 Pages	es			Exhibit R-3	-3	
					696						Item 104

696

Item 104

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	CT COST BRE	AKDOV	NN (R-3		DATE	4	90
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 060-1816A Longbow - Engineering Development	NO TITLE	ow - Engir	neering D	evelopin	repridary 1995	C C
Government Furnished Property - Not Applicable							
	Total Prior to	- - - -	9001 AH	Ì	\$ CC	Budget to	Total
Subtotal Product Development Subtotal Support and Management		66202	16283	FT 1996	FY 1997	Complete	730913
Subtotal Test and Evaluation Total Project	3550 659477	6853 79839	430				10833
							<del>-</del>
							· · · · · · ·
	Page 11 of 18 Pages				C_G ####	ទួ	•

970

Item 104

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATI	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	)evelopment	ent	PE NU 060	PE NUMBER AND TITLE 0604816A Long	PE NUMBER AND TITLE  0604816A Longbow - Engineering Development	- Engine	ering De	velopmer		PROJECT DC31
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to	Total Cost
DC31 Longbow - Apache	85950	88216	9261	0	0	0	0	0	0	548834
C. Other Program Funding Summary APA - Longbow Apache Mods (AA6607)	FY 1994 0	FY 1995 79438	FY 1996 270168	FY 1997 310729	FY 1998 349771	FY 1999 441378	<u>FY 2000</u> 518328	FY 2001 489977	To Compl 5203694	Total Cost 7663483
D. Schedule Profile  1 BIT Demonstrations Logistics Demonstrations Technical Test FDTE IOTE (Project D2DT) Long Lead IPR Long Lead IPR Long Lead Contract Award FCA Live Fire Testing Line Replaceable Units Qualification Environmental Control System Redesign Longbow Crew Trainer	FY 1994 2 3 X* X	<b>→ *</b>	- * ** - × ××	FY 1995 X X X X X X X X X X X X X X X X X X X	4	FY 1996	δ ε 4	-	FY 1997 2 3	4
			Page 12 of 18 Pages	8 Pages				Exhibit R-2	~	

10 % 1	RDT	SE PROG	RAM EL	RDT&E PROGRAM ELEMENT/PROJECT	OJECT	OST BE	EAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	995
Total Project   Total Obligations   FY 1994   FY 1995   FY 1996   FY 1997   FY 1996   T754   T754   T754   T754   T754   T7125   T7566   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T7554   T75	BUDGET ACTIVITY 5 - Engineering	And Manu	ıfacturing	) Developmer	)t	PE NUMBER 0604816	AND TITLE	ow - Engi	neering C	e.relopm		ROJECT <b>)С31</b>
Tranation           Performing         Project         Total         FY 1994         FY 1995         FY 1995         FY 1995         FY 1996         FY 1997         Complete         Proplete           416992         422100         308020         71126         70566         7754         0         0         4           416992         422100         308020         71126         70566         7754         0         0         0         0           880         1731         2800         1100         0         0         0         0         0         0         0           880         1473         595         0         0         0         0         0         0         0         0           Fage 13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         13 of 18 Pages         14 of 18 Pages         14 of 18 Pages         14 of 18 Pages         14 of 18 Pages	A. Project Cost Bre Contractor Engineeri Government Program Other Government Si PATS Contractor Pro SBIR/STTR Total	akdown ng & Develop Management Apport gram Support	ment		FY 1994 71126 5272 7821 1731 85950	E-l	1995 0566 4191 8806 2800 1853	FY 1996 7754 0 407 1100	FY 199'	Z		
416992 422100 308020 71126 70566 7754 0 0 0 4 1853  1853  53057 11620 12402 407 0 0 0 0 3450 1731 2800 1100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	B. Budget Acquisiti Performing Organiz Contractor or Government Performing Activity	on History an actions Contract Method/Type or Funding	d Planning   Award or Obligation	Information Performing  Reference Performing	Project Office EAC	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total
1853  \$3057	Product Development Contract:  McDonnell	ot Organizatic CPIF	ons AUG 89	416992	422100	308020	71126	70566	7754	0	0	457466
1731 2800 1100 0 0 0 0 880 1473 595 0 0 0 0 0 0 tized to date. Fotal Program data reflects additional work not yet on contract.  Page 13 of 18 Pages 13 of 18 Pages	Douglas Helicopter Systems SBIR/STTR Support and Manage Gov't In-House	ement Organi Varies	zations			53057	11620	1853	407	0 (	0 (	1853
tized to date. Fotal Program data reflects additional work not yet on contract.  Page 13 of 18 Pages.	Test and Evaluation Test Activities	vanes Organization Varies				3450	1473	2800	0	0	0	2948
Exhibit R-3	Note: EAC shown re Government Furnish	flects only con	itract work de - Not Applice	tized	Fotal Program	data reflects	additional w	ork not yet on	contract.			
					Page	13 of 18 Page	Sä			Exhibit F	2-3	

972

Item 104

COST BREAKDOWN (R-3) DATE February 1995	PE NUMBER AND TITLE  0604816A Longbow - Engineering Development DC31	Total           Prior to         FY 1994         FY 1995         FY 1996         FY 1997         Complete         Program 459319           308020         71126         72419         /754         459319           56507         13351         15202         1507         86567           880         1473         595         2948           365407         85950         88216         9261         548834	Page 14 of 18 Pages Exhibit R-3
RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Pa

RDT&E BUDGET ITEM JI		JSTIFICATION SHEET (R-2 Exhibit)	ON SHE	ET (R-2	Exhibit	<b>a</b>		DATE <b>Fel</b>	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	Development	ent	PE NC 000	PE NUMBER AND TITLE 0604816A LONG	DITLE Longbow - Engineering Development	- Engine	ering De	velopme		PROJECT DC87
COSf (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC87 LBATESS	0	0	14329	4080	0	0	0	0	0	18409
C. Other Program Funding Summary	FV 1994	FV 1995	EV 1006	FV 1007	8001 24	2	966	1006 /23	To	Total
Longbow Apache TESS (AA6607)	0	0	0	0	3600	3800	24400	1 2 2001 0	Compl 0	31800 31800
This procurement funding represents only the portion of this line to be used for this effort. The procurement line (SSN) includes additional funding for Longbow Apache efforts.	ion of this lin	e to be used	for this effor	1. The proc	urement line	: (SSN) inch	ıdes additioı	nal funding 1	for Longbov	v Apache
D. Schedule Profile	FY 1994		Œ.	FY 1995		FV 1996	<b>9</b>		FV 1007	
l Begin Kits installation Complete Kits installation	2 3	4	1 3	m	4 - ×	7	5 kv 4	_	2 3 3 x x x	4
									<b>:</b>	
		Į.	Page 15 of 18 Pages	8 Pages				Exhibit R-2	8	
			974							Item 104

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	COST BR	EAKDO	WN (R-3		DATE Fe	February 1995	966
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604816A LONG	AND TITLE A Longt	ow - Engi	PE NUMBER AND TITLE 0604816A Longbow - Engineering Development	evelopme		PROJECT DC87
A. Project Cost Breakdown							
Contractor Engineering & Development Longbow Crew Trainer Development Total	1995 1995	<u> </u>	FY 1996 14300 29 14329	FY 1997 4080 4080			
B. Budget Acquisition History and Planning Information							
Performing Organizations  Contractor or Contract Government Method/Type Award or Performing Project Performing or Funding Obligation Activity Office Activity Vehicle Date EAC EAC Product Development Organizations	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
MDHS Unknown Support and Management Organizations: N/A Test and Evaluation Organizations: N/A				14329	4080	0	18409
Government Furnished Property - Not Applicable							
Subtotal Product Development Subtotal Support and Management				14329	4080		18409
Subtotal Test and Evaluation  Total Project				14329	4080		18409
Pa	Page 16 of 18 Pages	Ç.			m Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima Minima	<u> </u>	
	310						Item 104

Item 104

Decision   Per Numbers And Transmister	RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ibit)	0	DATE Feb	February 1995	95
FY 1994 FY 1995 FY 1996 Estimate Estimate Estimate Estimate FY 1997		ow - Enginee	ring Deve	elopmen		PROJECT <b>D2DT</b>
FY 1994 FY 1995 TY 1995 TY 1995 TY 1994 TY 1994 TY 1994 TY 1995 TY 1994 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 1995 TY 199	FY 1995 FY 1996 Estimate Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
FY 1994 FY 1995 X* X*	23831 0	0	0	0	0	23831
FY 1994 FY 1995 $X \bullet \qquad X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X \bullet$ $X$						
1 2 3 4 1 2 3		FY 1996		μ	FY 1997	
*Denote complete effort	4 1 2 3 X*	1 2 3	A. A.	7	2 3	4
Dane 17 of 18 Dane			Ü	c 0 2 2 3 3 4 3 5 4 7		
926	926			3 10 10		Item 104

RDT&E PROGRAM ELEMENT/PROJECT		COST BREAKDOWN (R-3)	WN (R-3		DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AN 0604816A		DITILE Longbow - Engineering Development	neering D	evelopme		PROJECT D2DT
A. Project Cost Breakdown Operational Test and Evaluation SBIR/STTR Total	FY 1994 E	EY 1995 23330 501 23831	FY 1996	FY 1997			
B. Budget Acquisition History and Planning Information							
Performing Organizations  Contract  Contract  Government Method/Type Award or Performing Pro Performing or Funding Obligation Activity Or Activity  Activity Vehicle Date EAC E	Project Total Office Prior to EAC FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total <u>Program</u>
tions: N/A	23330 0	0	501	0	0	0	501
Government Furnished Property ot Applicable							
Subtotal Product Development Subtotal Sumort and Management			201				501
Subtotal Test and Evaluation Total Project			23330 23831				23330 23831
	Page 18 of 18 Pages	звез			Exhibit R-3	ę	

RDT&E BUDGET ITEM		TIFICAT	ION SH	JUSTIFICATION SHEET (R-2 Exhibit)	2 Exhib	it)		DATE Fel	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Deve	ng Development	ent	PE NO	PE NUMBER AND TITLE 0604817A Combat Identification	TILE Combat lo	Jentificat	ion			
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	33627	18424	30466	17359	10032	10085	2665	7266	Continuing	Continuing
D482 Ground Combat Identification	24817	18424	30466	17359	10032	10085	8882	7266	Continuing	Continuing
D356 Noncooperative Target Recognition - Electonic Surveillance Measure (NCTR-ESM)	8810	0	0	0	O	0	0	0	0	75634

friends, foes, and neutrals an absolute necessity, but increasingly difficult to achieve. The ability of weapons systems to engage targets at ranges longer than the capability to minimize this battlefield deficiency and is appropriately assigned to Budget Activity 5. The projects within this PE are in the Engineering and Manufacturing Development 4. Mission Description and Budget Item Justification: The world situation and modern warfare are evolving in a manner that dictates making reliable identification of positively identify them significantly increases the potential for fratricide. Work is directed toward the design and development of distinct technology devices to help

passing Situational Awareness data between BCIS equipped platforms. BCIS will be demonstrated during the Army Digitization Exercise, Task Force XXI. It will be used parts and practices to shorten acquisition timelines and to reduce cost. The purpose of BCIS is to reduce fratricide, a problem made increasingly difficult for gunners as we point of engagement system which provides through-the-sight, day/night, all weather positive identification of BCIS equipped US, Allied and coalition platforms. Shooters second. BCIS is resistant to electronic countermeasures, active exploitation and deception. Air-ground (A-G), Forward Air Controller and Enhanced BCIS are additional Project D482- Ground Combat Identification: The Battlefield Combat Identification System (BCIS) is the lead Army horizontal technology initiative using the "A kit" participate in coalition warfare where partners operate weapon systems formerly associated with adversaries. BCIS is a millimeter wave (mmW), ground-ground (G-G), query potential targets at ranges that can extend beyond 5 km. Friendly platforms targeted by friendly shooters generate automatic electronic responses in less than one (platform specific) and "B kit" (common to all platforms) philosophy. The program takes advantage of acquisition streamlining and directs industry to use commercial applications to be developed under this PE and Project. The Enhanced BCIS will add to the existing functions, a capability to provide platoon-level mmW network for by combat, combat support, and combat services support units.

# FY 1994 Program Accomplishments

- Conducted Preliminary Design Review (PDR) (792)
  - Conducted Critical Design Review (CDR) (1000)
- Initiated platform integration efforts (7000)
- Conducted Dismounted Soldier/Fixed Wing/Training Studies (500)
  - Initiated hardware fabrication/assembly/test (14725)
- Initiated modeling/simulation effort (800)

Page 1 of 9 Pages

Exhibit R-2

Item 105

876

RDT&E BUDGET ITEM JUST	M JUSTIFICATION SHEET (R-2 Exhibit)	TE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE  0604817A Combat Identification	
<ul> <li>FY 1995 Planned Program</li> <li>Complete hardware fabrication/assembly/test (6212)</li> <li>Complete platform integration (4726)</li> <li>Conduct Pre-Production Qualification Test (PPQT) (1850)</li> <li>Complete modeling/simulation effort (262)</li> <li>Exercise options for Task Force XXI (TF XXI) Experiment (5000)</li> <li>Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) Program (374)</li> </ul>	) nt (5000) ess Technology Transfer (STTR) Program (374)	
<ul> <li>FY 1996 Planned Program</li> <li>Conduct Limited User Test (LUT) (1200)</li> <li>Continue hardware build for Task Force XXI (19571)</li> <li>Initiate Forward Air Controller (FAC) EMD effort (3786)</li> <li>Initiate Enhanced BCIS effort (1818)</li> <li>Conduct Low Cost BCIS Study (1091)</li> <li>All Service Combat Identification Evaluation Team (ASC</li> </ul>	(19571) ffort (3786) Team (ASCIET) Support- (3000)	
<ul> <li>FY 1997 Planned Program</li> <li>Complete TF XXI effort (5154)</li> <li>Complete FAC effort (700)</li> <li>Complete Enhanced BCIS effort (850)</li> <li>Conduct Air-to-Ground (A-G) Preliminary Design Review (PDR) (1600)</li> <li>Conduct A-G Critical Design Review (CDR) (1920)</li> <li>Initiate A-G platform integration efforts (413.5)</li> <li>ASCIET Support - (3000)</li> </ul>	» (PDR) (1600)	
<b>Project D356 - NCTR-ESM:</b> AN/VSX-2 Target Acquisition permit maximum weapons air defense and encounter and preclibeir electronic emissions. The device collects, processes and	Project D356 - NCTR-ESM: AN/VSX-2 Target Acquisition and Identification devices developed by this project will locate and identify targets at extended ranges to permit maximum weapons air defense and encounter and preclude engagement of friendly aircraft. The NCTR-ESM device passively identifies aircraft by recognizing their electronic emissions. The device collects, processes and analyzes data for comparison to a signature library to identify the aircraft.	rgets at extended ranges to ifies aircraft by recognizing
<ul> <li>FY 1994 Program Accomplishments</li> <li>Completed integration of AN/VSX-2 unit with host platform (1700)</li> <li>Completed AN/VSX-2 PPQT/Operational Assessment (PPQT/OA) (2400)</li> <li>Completed Army Engineering and Manufacturing Development (E&amp;MD) (2660)</li> </ul>	orm (1700) PQT/OA) (2400) pment (E&MD) (2660)	

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	CATION	SHEET (R	-2 Exhibit)		DATE February 1995	
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development		PE NUMBER AND TITLE 0604817A Com	TITLE Combat Identification	ntification		
<ul> <li>Developed and tested Model 2 IFF capability for FAAD GBS (2050)</li> </ul>	050)					
B. Program Change Summary						
Previous President's Budget	FY 1994 34150	FY 1995 13666	FY 1996 10002	FY 1997 10026		
Appropriated Value Adjustments to Appropriated Value SBIR/STTR Decrement (-523)	34150 -523	18424				
Current Budget Submit/President's Budget	33627	18424	30466	17359*		
*Reflects a realignment of funding from Procurement to RDT&E units planned for Task Force 21 are engineering development models within experimental purpose and should be funded in the engineering and manufacturing development program.  **Page 3 of 9 Proces**  Exhibit R-2	uis planned fe	gram.  gram.  Page 3 of 0 Pages	are engineering	development mos	dels within experimental purpose	
		080			11cm 105	105

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUSTI	FICATION	SHS NC	ET (R-2	Exhibit			DATE Fel	February 1995	95
BUDGET ACTIVITY  5 - Fnoineering And Manufacturing Devel	Development	ent	PE NU	PE NUMBER AND TITLE 0604817A Com	TITLE Combat Identification	entificat	ion			PROJECT <b>D482</b>
COST (In Thousands)		FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D482 Ground Combat Identification	24817	18424	30466	17359	10032	10085	9992	7786	Continuing	Continuing
C. Other Program Funding Summary  Work in this program element is related to and fully coordinated with efforts in PE #0602120 (Battlefield Ground Combat Identification Technology) and PE #0603772 (Ground Combat Identification Demonstration).	ly coordinated	with effort	s in PE #060	12120 (Battle	efield Groun	d Combat Id	lentification	Technology	) and PE #0	503772
RDTE, A Budget Activity 2, PE 0602120A	FY 1994 4601	FY 1995 4085	FY 1996 3615	FY 1997 3783	FY 1998 3828	FY 1999 3927	FY 2000 3928	FY 2001 4030	To <u>Compl</u> Cont	Total Cost Cont
Proj AH15 Ground Combat Identification Tech RDTE A, Budget Activity 3, PE 0603772A Proj D281 Ground Combat ID Demo	5897	8173	9269	7349	3528	0	0	0	0	36824
D. <u>Schedule Profile</u>	FY 1994 2 3	4	1 F 2	FY 1995 2 3	4	FY 1996 2 3	96 3 4	-	FY 1997 2 3	4
Conduct Preliminary Design Review X* Conduct Critical Design Review Initiate Platform Integ Complete Dismounted accuser/Fixed	*	**								
Wing/ I raining Studies Initiate Hardware Fabrication/Assmb/Test Initiate modeling/simulation effort Complete Hardware Fabrication/ Assmb/	*	* *	^	×						
Test Complete modeling/simulation effort Exercise option for TF XXI Experiment Conduct PPOT			^^	× ××						
Complete platform integration Conduct LUT				×	×					
			Page 4 of 9 Pages	9 Pages				Exhibit R-2	25	
			180	_						Item 105

RDT&E BUDGET ITEM JUSTIFICATION	STIFICATION SHEET (R-2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604817A Combat Identification	PROJECT D482
Initiate FAC effort  Initiate Enhanced BCIS effort  Complete TF XXI Experiment  Complete FAC effort  Complete Enhanced BCIS effort  Conduct A-G PDR  Conduct A-G PDR  Conduct A-G DDR  Initiate A-G platform integration efforts	FY 1995  2 3 4 1 2 3 4  X X X  X X	FY 1997  X  X  X  X  X  X  X  X  X  X  X  X  X
Pa	Page 5 of 9 Pages	Exhibit R-2
	083	Item 105

885

Item 105

RD	RDT&E PROGRAM ELEME	RAM EL		NT/PROJECT C	SOST BI	REAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	ig And Manu	facturing	Development		PE NUMBER AND <b>0604817A</b>		) TITLE Combat Identification	cation			РРОЈЕСТ <b>D482</b>
A. Project Cost Breakdown	reakdown										
Primary Hardware Development Platform Integration System Engineering/Program Management Support Government Contractor Program Management Personnel Development Test and Evaluation Operational Test and Evaluation ASCIET SBIR/STTR Total  B. Budget Acquisition History and Planning Informati	Development n g/Program Mana ent Personnel and Evaluation id Evaluation	gement Suppo. d Planning In	r formation	FY 1994 13644 5965 2592 1812 804		FY 1995 8786 3792 1291 1473 858 1850 374 18424	FY 1996 19282 3350 1280 1454 900 3000 30466	FY 1997 7243 3888 1264 1014 950 3000	L  E 8 4 4 0 C 6		
Performing Organizations Contractor or Contra Government Metho Performing or Fun Activity Vehicl	nizations Contract Method/Type or Funding	Award or Obligation <u>Date</u>	Performing Activity <u>EAC</u>	Project Office <u>EAC</u>	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to	Total Program
Product Development Organizations TRW C/CPAF GDLS SS/CPFF Misc MIPR TBS (Hardware) CPAF TBS (Integration) CPFF	ent Organizations C/CPAF SS/CPFF MIPR CPAF CPFF	12 Aug 93 29 Apr 94 15 Jan 94 2Q97 2Q97	\$0330 6655	51106	5400 0 0 0	13644 2863 3102 0	8786 3792 0 0	19282 0 3350 0	3994 0 200 3249 3688	8265 20768	51106 6655 6652 11514 24456
Support and Management Organizations MIPR CECOM MIPR SBIR/STTR	gement Organiza MIPR MIPR	suon		Page	2632 1393 0 Page 6 of 9 Pages	2616 2592 0 0	2331 1291 374	2354 1280 0	1964 1264 0 Exhibit R-3	0 R-3	Continue Continue 374 Item 105

RDT&E PE	RDT&E PROGRAM ELEMENT/PROJECT	ELEM	ENT/PRO		SOST BR	EAKDO	COST BREAKDOWN (R-3)		DATE	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Manufacturi	ing De	velopment		PE NUMBER AND TITLE 0604817A COM	AND TITLE	PE NUMBER AND TITLE 0604817A Combat Identification	ation			PROJECT <b>D482</b>
Contractor or Contract	x										
	8.		Performing	Project	Total						
ing		tion	Activity	Office	Prior to			ì		Budget to	Total
Activity	Date		EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Evaluation (						,		•	,	,	
	01 Mar 95	r 95	•		0	0	1850	0	0	2648	4498
TEXCOM MIPR	15 Oct 95	95			0	0	0	1200	0	1766	2966
41	10 96/97	.60			0	0	0	3000	3000	0	0009
Combat Identi-	•										
fication Evaluation											
Team (ASCIET)											
Contract Consists Decorated	7										
Covernment frammanca i representation	r i										
Method/Type	UTvne Award or	ż			Total						
Item or Funding	₹.		Delivery		Prior to					Budget to	Total
niption	D		Date		FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
Product Development Property	<b>E</b> r										
Support and Management Property	operty										
Test and Evaluation Property											
					Total						
					Prior to	1001 VII	1006	EV 1004	EV 1007	Budget to	
	•				FY 1994	10600	17578	77637	11131	29033	Cont
Subtotal Froduct Development	11				3007	\$308 \$308	3673	1632	3228		
Subtotal Support and Management	emeni				4073	9776	3022	4200	3000	4414	
Subtotal lest and Evaluation						•	<b>+777</b>	4700	600	•	
Total Project					9425	24817	18424	30466	17359		Cont
				4	!				i L	6	
				Pag	Page 7 of 9 Pages	S			EXPIDIT K-3	χ-5.	
					984						Item 105

RDT&E BUDGET ITEM J		JSTIFICATION	ON SHEET		(R-2 Exhibit)	t)		DATE <b>Fel</b>	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel	Development	ent	PE NI 060	PE NUMBER AND TITLE 0604817A Com	ritle Sombat Io	) गग∟∈ Combat Identification	ion		2 C	PROJECT <b>D356</b>
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D356 Noncooperative Target Recognition - Electonic Surveillance Measure (NCTR-ESM)	8810	0	0	0	0	0	0	0	0	75634
C. Other Program Funding Summary No rela	No related RDTE or other appropriations efforts.	r other app	ropriations	esforts.	:				É	E
	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	Compl	Cost
T. C. Leading of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the										
	FY 1994	4	1 2	FY 1995	4	FY 1996	36	_	FY 1997	4
Complete platform integration X* Complete PPQT-OT Complete Development	*	^	1	n		1		•	1	
										******
										•
			Page 8 of 9 Pages	) Pages				Exhibit R-2	2	
			\$86							Item 105

RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)	ST COST BREAKE	<b>JOWN (R-3)</b>		DATE February 1995	
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604817A Combat Identification	E nbat Identifica	ation	PROJECT D356	ест <b>5</b>
A. Project Cost Breakdown D356:					
Host Platform Integration PPQT-OT Complete EMD Effort Develop and Test IFF Capability (Model 2) Total	FY 1994 FY 1995 1700 0 2400 0 2660 0 2050 0	FY 1996 0 0 0	FY 1997 0 0 0		· · · · · · · · · · · · · · · · · · ·
	Page 9 of 9 Pages			Exhibit R-3	
	980			Item	Item 105

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	EM JUS	TIFICAL	ION SH	EET (R	-2 Exhit	oit)		DATE <b>Fe</b> l	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	Development	lent	PE NU 060 Sys	PE NUMBER AND TITLE 0604818A Arm System (ATCCS	πτιε Army Tac CCS)-Επο	PENUMBER AND TITLE 0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development	nmand & Develo	Control pment		
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	23976	18694	18769	16960	16801	16625	9992	7266	Continuing	Continuing
DC34 ARMY TACTICAL C2 SYSTEMS (ATCCS) ENGINEERING	13911	10346	10739	8947	8865	8774	8882	7766	Continuing	Continuing
DC36 C31 INTEROPERABILITY TEST SUITE	1871	0	0	0	0	0	0	0	0	1871
D323 COMMON HARDWARE SOFTWARE (CHS)	8194	8348	8030	8013	7936	7851	0	0	Continuing	Continuing
	ı									

Intelligence (C31) interoperability test bed provides each system developer the capability to conduct system compatibility and interoperability evaluations with other systems Intelligence/Electronic Warfare; (4) Forward Area Air Defense Command, Control and Intelligence System (FAADC2I); and (5) Combat Service Support System (CSSCS) and to other Army Joint and Allied Systems. To provide an overall technically sound, cost effective, and operationally responsive approach, the design and development of without requiring the interfacing systems to be relocated. Each ATCCS life-cycle software engineering center throughout the country is connected via commercial leased Tactical Command and Control System (ATCCS) program. The ATCCS program provides automation in the five battlefield functional areas (BFAs) with the following ATCCS must be accomplished on a total systems basis. The ATCCS Engineering program provides the required systems engineering to assure integrated Army tactical command and control, and the utilization of common hardware and software throughout the five ATCCS nodal systems. The Command, Control, Communications and lines to each of the other centers to test the interface's prior to field testing. The Common Hardware Software (CHS) project provides common hardware and software to A. Mission Description and Budget Item Justification: The umbrella program to exploit automation technology for the conduct of combat operations is the Army specific systems: (1) Maneuver Control System (MCS); (2) Advanced Field Artillery Tactical Data System (AFATDS); (3) All Source Analysis System (ASAS) for customers to meet their developmental and fielding needs. The projects in this program element support the ATCCS programs which for the most part are in the engineering and manufacturing development phases of their acquisition strategies and, therefore, they are correctly placed in Budget Activity 5.

Tactical Command and Control System (ATCCS) Program. The effort to achieve horizontal integration of the ATCCS battlefield functional areas (BFA), although going control decisions to direct the activities of assigned and supporting units. The umbrella program to exploit automation technology in support of this mission is the Army development, interoperability, fielding, and sustainment to assure an interoperable, as well as, affordable ATCCS. The Program Executive Officer Command and Control on independently in each BFA, was not disciplined enough to address all connections and needs within the entire spectra of communications and control. Therefore, to provides the technical and programmatic disciplines required for systems engineering and integration, experimentation, acquisition management, testing, Ada software Project DC34 - Army Tactical C2 Systems (ATCCS) Engineering: The Airland Battle Doctrine requires military leaders to make sound and timely command and ensure this horizontal integration effort is complete and automated, a significant management, systems engineering and integration effort is required. This project Systems (PEO CCS) has planned an evolutionary approach to fielding the ATCCS as soon as possible.

Page I of II Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIFICATION	JUSTIFICATION SHEET (R-2 Exhibit)	February 1995
BUDGET ACTIVITY	PE NUMBER AND TITLE	
5 - Engineering And Manufacturing Development	0604818A Army Tactical Command & Control	rol
	System (ATCCS)-Engineering Development	

# FY 1994 Program Accomplishments:

- Prototyped and demonstrated battalion and below command and control (B2C2) rapid prototype to meet identified B2C2 functions in support of National Training Center Rotation (1000)
- Conducted/supported system configuration/operational demonstration and system interface compatibility demonstrations in conjunction with ATCCS III (2700)
  - Conducted technical horizontal interoperability engineering and interoperability lab (2000)
    - Provided ATCCS interoperability and system level engineering support (2900)
- Initiated a tech insertion program for ATCCS, e.g., voice recognition global positioning system (GPS) and terrain evaluation (578)
  - Updated the command post analysis for notional units to finalize follow-on test evaluations (1000)
    - ATCCS Testing support (3733)

#### 1995 Planned Program: FY

- Perform functional analysis and update command post analysis to allow FOTE/fielding (1000)
- Establish an ATCCS data architecture and standardization program (800)
- Continue the tech insertion program, e.g., large screen displays, plotters, advanced networking, weather tactical decision aids, and interactive electronic pen
- Provide ATCCS interoperability engineering and system level engineering support (3000)
- Produce and test voice recognition system and GPS prototype (700)
- Continue B2C2 applications, including brigade/battalion task force and operation plan/operations order, and refine communications interface to include IVIS (672)
  - Conduct/support system configuration developmental/operational demonstrations in conjunction with MCS V.12 Limited User Test (LUT) (3479)
    - Small Business Innovative Research/Small Business Technology Transfer (SBIR/STTR) (195)

# FY 1996 Planned Program:

- Perform functional analysis and update command post analysis to allow Follow-on Test and Evaluation (FOTE)/fielding (800)
- Extend the ATCCS data architecture and standardization program to additional functional areas (1400)
- Continue the tech insertion program, e.g., advanced comm protocols, advanced networking, tactical decision aids, and extended interactive electronic pen technology
- ATCCS interoperability engineering and system level engineering support (3000)
- Perform verification and validation of all BFA fielded software including common and unique applications (1700)
  - Productize B2C2 applications for embedded applications (800)
- Conduct/support system configuration developmental/operational demonstrations in conjunction with MCS Initial Operational Test & Evaluation (10T&E) and other

Page 2 of 11 Pages

Exhibit R-2

Item 106



RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	SHEET (R-2 Exhibit)	February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PENUMBER AND TITLE 0604818A Army Tactical Command & Control	trol
	System (ATCCS)-Engineering Development	nt

# FY 1997 Planned Program:

- Perform functional analysis and update command post analysis to allow FOTE/fielding (500)
- Extend the ATCCS data architecture and standardization program to additional functional areas including a standard data element dictionary (1200)
  - Continue the tech insertion program, e.g., wireless LANs, high efficiency net radio protocols, and interactive video (547)
    - ATCCS interoperability engineering and system level engineering support (3700)
- Perform dependency analysis and verification and validation of all BFA fielded software including common and unique applications (800)
  - Perform multi-echelon integration of all command and control applications (800)
- Conduct/support system configuration developmental/operational demonstrations in conjunction with BFA FOTE's (1400)

Project DC36 - C31 Interoperability Test Suite: The ATCCS C31 Interoperability Test Suite is a collection of equipment and software that collectively represents BFA Central Systems (BFACS) in a pseudo-realistic command post setting. The Suite is linked to other compatible test, experimentation, validation, and demonstration sites evaluations, and certification of various message exchange implementations prior to live testing. Furthermore one may conduct rapid cost effective experiments and development of interoperable automated Command and Control (C2) systems, facilitates the smooth transition from the initial to the objective systems and supports demonstrations on the ATCCS family of systems as hardware, software and concepts evolve. The activity supports early evaluation of emerging technology in the (ATCCS Experimentation Site.-AES; Total System, Tactical Validation-TSTV; Battle Laboratory-BCCL; Electronic Proving Ground-EPG, etc.) via the Army Interoperability Network (AIN). The Suite provides a capability to do rapid prototyping, intra - Army and joint services compatibility and interoperability (C&I) evaluation of communication systems and hardware platforms integral to the ATCCS family of systems

# FY 1994 Program Accomplishments:

- Experimentation in support of battlefield functional area (BFA) block/version developments, which include MCS, ASAS, CSSCS, V3.3 & 4, FAADC2 V4 and AFATDS V1 & V2 (450)
- Executed follow-on ATCCS logistics maintainability demonstration (LMD) with Standardized Integrated Command Post System (SICPS), common hardware software (CHS), lightweight computer unit (LCU) (200)
  - Executed ATCCS confidence demonstration to determine the operational and technical readiness of ATCCS to proceed to ATCCS III test and evaluation (950)
    - Experimentation in support of BFA developments, to include FAADC2 V4 (heavy), CSSCS V4 and AFATDS V2 (165)
      - Evaluated methods and implementation of common ATCCS support (CASS) V2 into ATCCS and BFA's (106)

FY 1995 Planned Program: No planned program in RDTE.

Army Command and Control Systems. The project provides vehicles (contracts) from which customers can acquire/procure state of the art common hardware/software and Project D323 Common Hardware Software (CHS): The CHS program is the cornerstone upon which the Army must build its integrated efforts for tying together the

Page 3 of 11 Pages

Exhibit R-2

Item 106

# February 1995 DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) PE NUMBER AND TITLE

5 - Engineering And Manufacturing Development

0604818A Army Tactical Command & Control

associated peripherals to meet their developmental and fielding needs. The project also develops reusable common support software and command post internal structures System (ATCCS)-Engineering Development

# FY 1994 Program Accomplishments:

within shelters. The common software supports many Army, other services and Joint systems.

- Managed the acquisition and delivery of CHS-1/Lightweight Computer Unit (LCU) equipment in support of customer requirements (767)
  - Executed the Common Hardware, Software Reuse and Standard Integrated Command Post System (SICPS) Programs (6229)
- Completed Source Selection process and awarded contract for CHS-2 (1198)

# FY 1995 Planned Program:

- Manage the acquisition and delivery of CHS-1/LCU equipment in support of customer requirements. Perform Source Selection Evaluation for CHS-2 Re-award. Test, accept, and deliver initial CHS-2 hardware and software (1329)
  - Provide SICPS Rigid Wall Shelter (RWS), M1068, 5-Ton and Softtop platforms in support of BFA requirements (1109)
- Continue execution of the Common Hardware and Software Reuse programs. Support joint and DOD C2 programs (5749)
  - SBIR/STTR (161)

# FY 1996 Planned Program:

- Continue management of the acquisition and delivery of CHS equipment (LCU/CHS-2) in support of customer requirements (1300)
  - Continue execution of Common Hardware and Common Software Reuse programs (5325)
- Continue providing SICPS RWS, M1068, 5-Ton and Softtop platforms in support of BFA requirements (600)
- Support the Army's initiative to digitize the battlefield (805)

#### 1997 Planned Program: FY

- Continue management of the acquisition and delivery of CHS equipment (LCU/CHS-2) in support of customer requirements (1250)
  - Continue execution of Common Hardware and Common Software Reuse programs (5407)
- Continue providing SICPS RWS, M1068, 5-Ton and Softtop platforms in support of BFA requirements (553)
  - Continue supporting the Army's initiative to digitize the battlefield (803)

Page 4 of 11 Pages

Exhibit R-2

RDT&E BUDGET ITEM JUSTIF	CATION	STIFICATION SHEET (R-2 Exhibit)	-2 Exhibit)		DATE February 1995	
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	jt.	PE NUMBER AND TITLE 0604818A Arm) System (ATCCS	PENUMBER AND TITLE 0604818A Army Tactical Com System (ATCCS)-Engineering	PE NUMBER AND TITLE 0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development	mand & Control Development	
B. Program Change Summary Previous President's Budget Appropriated Value Adjustments to Appropriated Value a. SBIR/STTR decrement (-316)	FY 1994 21992 21992 +1984	<u>FY 1995</u> 19296 18694	<u>FY 1996</u> 18822	FY 1997 16991		
Current President's Budget	23976	18694	18769	16960		<del></del> -
Change Summary Explanation: Project DC34: Funding: FY94 (+2.3M) provided for ATCCS testing support. Schedule: None Technical: None	.:					
	Page	Page 5 of 11 Pages			Exhibit R-2	
		166			Item	Item 106

RDT&E BUDGET ITEM JU	M JUST	ISTIFICATION SHEET (R-2 Exhibit)	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developn	ient	PE NU 060	PE NUMBER AND TITLE 0604818A Army System (ATCCS	TILE Army Tact CCS)-Eng	PE NUMBER AND TITLE 0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development	mand & Contro Development	Control	ā <b>Q</b>	PROJECT DC34
COST (In Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DC34 ARMY TATICAL C2 SYSTEMS (ATCCS) ENGINEERING	13911	10346	10739	8947	8865	8774	3992	7.766	Continuing	Continuing
C. Other Program Funding Summary. Not Ap	Not Applicable									
D. Schedule Profile	FY 1994	_	Ĺ	Y 1995		FY 195	9		FY 1997	•
_	7	4	1 2	2 3	4	2 3	3 4		2 3	4
ATCCS System Confidence Demo-3 ATCCS III Operational Test & Eval ATCCS System Confidence Demo-4 ATCCS Operational test & Eval - M^S LUT Finalize Objective ATCCS specification ATCCS system confidence Demo-5 ATCCS V Operational Test & Evaluation ATCCS V Operational Test & Evaluation ATCCS VI Operational Test & Evaluation	<b>*</b>	*	•	<u>.</u>	× ×			× :		×
			Page 6 of 11 Pages	Fages				EXPIDIT K-Z	7.	
			992							Item 106

RDT	RDT&E PROGRAM ELEME	RAM E		NT/PROJECT COST BREAKDOWN (R-3)	OST BR	EAKDO	WN (R-3	(	DATE	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel	And Manu	ıfacturing	y Development	nt	PE NUMBER AND TITLE 0604818A Army System (ATCCS	AND TITLE  A Army (ATCCS)	PE NUMBER AND TITLE 0604818A Army Tactical Comi		nand & Control Development		PROJECT DC34
A. Projer & Cost Breakdown System Engineering and Integration Support Total	akdown nd Integration	1 Support		FY 1994 13911 13911	[ <u>[</u>	FY 1995 10346 *10346	<u>FY 1996</u> 10739 10739	FY 1997 8947 8947			
*SBIR/STTR (195)											
D. Dunker Acquiser	UII IIISIOI ATI										
Performing Organizations	ations										
Contractor or	Contract Method/Tyne	Award or	Performing	Project	Total						
Performing	or Funding		Ac	Office	Prior to					Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Progra
Froduct Development Organizations	IT OF SANIZATION PWD	800				6535	6192				12727
TBD	PWD							6459	5376	CONT	CONT
	MIPR					1025	510	510	340	CONT	CONT
	PWD					3214	2784	2910	2507	CONT	CONT
Matrix-CECOM	MIPR		ļ			827	860	<b>8</b> 90	724	CONT	CONT
Support and Management Organizations: None Test and Evaluation Organizations	ement Organi Organization	izations: No	ne								
OPTEC	0					1788					1788
RDA	PWD					522					522
Government Furnished Property: None	ned Property:	None									
Subtotal Product Development	elopment					11601	10346	10739	8947	CONT	CONT
Subtotal Support and Management	Management										
Subtotal Test and Evaluation Total Project	indation					13911	*10346	10739	8947	CONT	TNO)
*SBIR/STTR (195)											
				Page	Page 7 of 11 Pages	S			Exhibit R-3	7-3	
											Item 106

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	M JUST	FICATION	ON SHE	ET (R-2	Exhibit	<b>a</b>		DATE Fe	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Jevelopm	ent	PE N. 060	PE NUMBER AND TITLE 0604818A Army System (ATCCS	PENUMBER AND TITLE 0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development	tical Con yineering	nmand & Contra 3 Development	Control		PROJECT DC36
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cc. + to Complete	Total Cost
DC36 C31 INTEROPERABILITY TEST SUITE	1871	0	0	0	0	0	0	0	0	1871
C. Other Program Funding Summary: Not Applicable	plicable									
D. Schedule Profile: Not Applicable										
			<	(				( : :		
			Page 8 of 11 Pages	Pages				EXPIDIT K-2	7	

70

Item 106

<b>JT&amp;E PROGRAM ELEMEN</b>	T/PROJECT		REAKDO	COST BREAKDOWN (R-3)		DATE F.	February 19	1995
BUDGET ACTIVITY 5 - Engineering And Manufacturing Development	pment	9604818A System (A'	PE NUMBER AND TITLE 0604818A Army System (ATCCS)	PE NUMBER AND TITLE 0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development	ommand ing Deve	nand & Contro Development		PROJECT <b>DC36</b>
A. <u>Project Cost Breakdown</u> Interoperability Test Suite Support Total	FY 1994 1871 1871		FY 1995 0 0	FY 1996 0	FY 1997 0	7] 0 0		
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performing Performing or Funding Obligation Activity Activity Vehicle Date EAC Product Development Organizations: None Test and Fushington Organizations: None	on ming Project tivity Office EAC EAC	Total Prior to FY 1994	FY 1994	FY 199 <u>5</u>	FY 1996	FY 1997	Budget to Complete	Total Program
AES  Government Furnished Property: None			1871					
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			0 0 1871 1871	0000	0000	0000	0000	0000
	Pt	Page 9 of 11 Pages 995	S			Exhibit R-3	<sub>ك</sub>	Item 106

RDT&E BUDGET ITEM JU	M JUST	FICATI	ON SHE	ET (R-2	STIFICATION SHEET (R-2 Exhibit)			DATE Fel	February 1995	366
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	Developm	ent	PE N. 060	PE NUMBER AND TITLE 0604818A Army System (ATCCS	PE NUMBER AND TITLE 0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development	tical Con yineering	mand & Develor	Control		PROJECT <b>D323</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D323 COMMON HARDWARE SOFTWARE (CHS)	8194	8348	8030	8013	7936	7851	0	0	Continuing	Continuing
C. Other Program Funding Summary	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	To	Total Cost
OPA-2 (BZ9860) Common Hardware Software	18000	0	0	0	0	0	0	0	0	18000
D. <u>Schedule Profile</u>	FY 1994		Н с	FY 1995	4	FY 1996	9,6	-	FY 1997	•
CHS-2 Contract Award CHS-2 Contract Canceled (Protest) CHS-2 Contract Re-Award CHS-2 Production Delivery V-1 Start CHS-2 Production Delivery V-2 Start		· *	* *		· ×	· ×				•
			966						7	Item 106

RDT&E PROGRAM ELEMENT/PROJECT		ST BRE	EAKDO	COST BREAKDOWN (R-3)		DATE Fe	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE 06	PE NUMBER AND TITLE 0604818A Arm; System (ATCCS	ND TITLE A Army ATCCS)-	Factical C Engineer	PENUMBER AND TITLE 0604818A Army Tactical Command & Control System (ATCCS)-Engineering Development	& Control opment		РRОЈЕСТ <b>D323</b>
A. <u>Project Cost Breakdown</u> Program Management Personnel Contract Engineering Support Total	FY 1994 4862 3332 8194	FY 1995 3785 4563 *8348	199 <u>5</u> 3785 4563 8348	FY 1996 3694 4336 8030	FY 1997 3694 4319 8013			
*SBIR/STTR (161)  B. Budget Acquisition History and Planning Information								
Award or Performing Obligation Activity Date EAC	Project CMFC Pro	Total Prior to FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Matrix-CECOM Matrix-CCCOM MISC Contrs			1652 3332	1379 4563	136 <b>5</b> 4336	1365 4319	CONT	CONT
Support and Management Organizations In-House (CHS) Test and Evaluation Organizations: None			3210	2406	2329	2329	CONT	CONT
Government Furnished Property: None								
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project			4984 3210 0 8194	5942 2406 0 *8348	5701 2329 0 8030	5684 2329 0 8013	CONT CONT 0 CONT	CONT CONT 0
•SBIR/STTR (161)								
	Page 11 o	Page 11 of 11 Pages				Exhibit R-3	-3	
	6	266						Item 106

	RDT&E BUDGET ITEM J	EM JUS	USTIFICATION SHEET (R-2 Exhibit)	HS NOI.	IEET (R	-2 Exhib	oit)		DATE FeI	February 1995	95
BUDGE 5 - E	BUDGET ACTIVITY  5 - Engineering And Manufacturing Develo	Jevelopm	opment	PE NI	PE NUMBER AND TITLE 0604820A Rada	ritle Radar Dev	DE04820A Radar Development	ot .			
	COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
	Total Program Element (PE) Cost	16661	10851	0	0	0	0	0	0	0	141323
DE10	DE10 FAAD Ground Based Sensor	16661	2900	0	0	0	0	0	0	0	136372
D2IT	FAAD C3I Oper Test	0	4951	0	0	0	0	0	0	0	4951

missiles, and fixed wing aircraft) to FAAD weapons and forward maneuver forces. These projects are related to an engineering and manufacturing development program acquisition/tracking capability for Divisional and Corps FAAD weapons. The GBS consists of a radar-based sensor system with its prime mover/power, Identification A. Mission Description and Budget Item Justification: The Forward Area Air Defense (FAAD) Ground Based Sensor (GBS) is the key air surveillance and target contributes to the digital battlefield by automatically detecting, tracking, classifying, identifying, and reporting targets (rotary wing, unmanned aerial vehicles, cruise Friend or Foe (IFF) and FAAD Command and Control Intelligence (C21) interfaces. The GBS is an advanced three dimensional battlefield air defense radar which for service use that has not yet received approval for full-rate production. They are, therefore, appropriate for Budget Activity 5. Project DE10 - FAAD Ground Based Sensor: The GBS mission is to alert/cue AVENGER, the Bradley Stinger Fighting Vehicle (BSFV) and Man Portable Air Defense System (MANPADS) teams to hostile and unknown aircraft, protect friends from fratricide, and provide air situation data to command and control centers. FAAD GBS Location Reporting System (EPLRS) or through the FAAD C21 system. The FAAD GBS is the only planned Army air defense radar that has the range and accuracy performs this mission by providing its air picture data directly to support fire units over Single Channel Ground Air Radio System (SINCGARS)/Enhanced Position performance, plus Electronic Counter Measures and Anti-Radiation Missile resistance, to perform this vital mission within current force structure, throughout the spectrum of conflict in support of light and heavy forces. The FAAD GBS has the ability to expand it's capability to keep current with the evolving threat.

# FY 1994 Accomplishments:

- Conducted Development Test I (250)
- Conducted In-Process Review (IPR) for advance procurement (40)
- Completed development and fabrication of six pre-production sensors and converted one pre-production Antenna Transceiver Group of the Multipurpose Wheeled Vehicle (HMMWV) configuration (9957)
  - Prepared and updated documentation defined by DODI 5000.2 and conduct pre-milestone activities for Milestone III DAB review (424)
- Continued system test to include logistics and maintainability demonstration, and development test with FAAD C3I (1094)
  - Continued programmatic and technical support (2715)
- Concluded integrated logistics development and equipment publications for GBS 5-ton and HMMWV configuration (1179)
  - Developed of prime mover and power for HMMWV configuration (1002)

Page I of 7 Pages

Exhibit R-2

Item 107

866

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	ON SHEET (IR-	2 Exhibit)	DATE February 1995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Development	PE NUMBER AND TITLE 0604820A Rada	DE NUMBER AND TITLE OE04820A Radar Development	
<ul> <li>FY 1995 Planned Program:</li> <li>Contractor Technical Support (320)</li> <li>Continue programmatic and technical support (3233)</li> <li>Complete HMMWV Development &amp; Performance Test (2097)</li> <li>Conduct Milestone III DAB (126)</li> <li>Small Business Innovative Research (SBIR)/Small Business Technology Transfer (STTR) program (124)</li> </ul>	fransfer (STTR) progr	ım (124)	
Project D2IT - FAAD C31 Oper Test: Project D2IT finances the direct costs of planning and conducting operational testing and evaluation of the Forward Area Air Defense Command, Control, Communications and Intelligence (FAAD C31) system by the Operational Test and Evaluation Command (OPTEC). The FAAD C31 is an Acquisition Category (ACAT) I system with a dedicated Initial Operational Test and Evaluation (IOTE) in FY 95 in support of a Milestone III full production decision. (In FY 95 and beyond, funding for operational testing of ACAT I systems is programmed with PE funding development for each system. Future fiscal years will be reprogrammed when system information becomes available.) Operational testing is conducted under conditions, as close as possible, to those encountered in actual combat with typical soldiers trained to employ the system. OPTEC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the system.	sts of planning and con system by the Operation (IC Test and Evaluation (IC programmed with PE feting is conducted undecadership with an indep	ducting operational testing and Test and Evaluation Co OTE) in FY 95 in support of unding development for each r conditions, as close as pose endent test and evaluation of	nances the direct costs of planning and conducting operational testing and evaluation of the Forward Area Air igence (FAAD C31) system by the Operational Test and Evaluation Command (OPTEC). The FAAD C31 is an Initial Operational Test and Evaluation (IOTE) in FY 95 in support of a Milcstone III full production decision. ACAT I systems is programmed with PE funding development for each system. Future fiscal years will be ble.) Operational testing is conducted under conditions, as close as possible, to those encountered in actual combat EC provides Army leadership with an independent test and evaluation of effectiveness and suitability of the
FY 1994 Planned Program: Unfunded in FY 1994			
<ul> <li>FY 1995 Planned Program:</li> <li>Conduct FAAD C31 Test Preparation (285)</li> <li>Conduct FAAD C31 Operational Test (3752)</li> <li>Conduct Evaluation of FAAD C31 (810)</li> <li>SBIR/STTR (104)</li> </ul>			
B. Program Change Summary			
Previous President's Budget  Appropriated Value  Adjustments to Appropriated Value (Total PE)  a. SBIR/STTR (-273)	10999	FY 1996 FY 1997	
b. Reprogramming out of PE (-1000)  Current Budget Submit/President's Budget  16661	10851		
	Page 2 of 7 Pages		Exhibit R-2

RDT&E BUDGET ITEM JI	M JUST	USTIFICATION SHEET (R-2 Exhibit)	ON SHE	ET (R-2	Exhibit			DATE Fe	February 1995	995
BUDGET ACTIVITY  5 - Engineering And Manufacturing Devel	Development	ent	PE NU 060	PE NUMBER AND TITLE 0604820A Rada	TITLE Radar Dev	TITLE Radar Development	]			PROJECT <b>DE10</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
DE10 FAAD Ground Based Sensor	19991	2900	0	0	0	0	0	0	0	136372
C. Other Program Funding Summary	FY 1994	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 200 <u>0</u>	FY 2001	To	Total
Other Procurement, Army-2 SSN WK 5053 Spares BS 9732	7900	63855	44678	53282	46776	44438	64327	69010	continues	continues
D. Schedule Profile	FY 1994		<b>L.</b>	FY 1995		FY 1996	96		FY 1997	
In-Process Review Complete Pre-Production Fabrication Development Test with FAAD C2 IOTE Complete In-Process Review Award LRIP Option Milestone III DAB FUE Pre-Production Award 2nd FSP Option Award 3rd FSP Option FUE Production	<sup>₹</sup> × 7	* ****	- ×	~ ××	<del>-</del>	× ×	າ	- ×	~ ×	4
			Page 3 of 7 Pages	. Pages				Exhibit R-2	2	
			0001							Item 107

1000

Item 107

RDT8	RDT&E PROGRAM ELEME	RAM ELI		NT/PROJECT C	OST BE	REAKDC	COST BREAKDOWN (R-3)		DATE F6	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Devel	And Manu	facturing	Development	4	PE NUMBER AND <b>0604820A</b>	PE NUMBER AND TITLE 0604820A Radar	TITLE Radar Development	nent			PROJECT <b>DE10</b>
A. Project Cost Breakdown  Contractor Engineering and Manufacturing Support Test Support Engineering Support Program Management Support SBIR/STTR	<u>ikdown</u> ig and Manufa Support	cturing Suppo	Ę	EY 1994 12138 1344 1228 1951	된	FY 1995 320 2097 3359 124 5900	FY 1996	FY 1997			
B. Budget Acquisition History and Planning Informati Performing Organizations Contractor or Contract Government Method/Type Award or Perfor Performing or Funding Obligation Ac Activity Vehicle Date Product Develonment Organizations	on History and ations Contract Method/Type or Funding Vehicle	Award or Obligation Date	formation  Performing  Activity  EAC	Project Office EAC	Total Prior to	FY 1994	FY 1995	FY 1996	FY 1997	Budget to Complete	Total Program
Hughes Aircraft	C/FFP	Feb 92	\$6836	56836	44378	12138	320				56836
Company MICOM TECOM Other/Misc	MIPR MIPR MIPR	•			14709 1068 5178	1136 17 92	2821 48 538				18666 1133 5808
Support and Management Organizations MICOM MIPR Other/Misc MIPR SIBR/STTR	ement Organiz MIPR MIPR	cations			18438 1443	1687 264	124				20125 1707 124
Test and Evaluation Organizations OPTEC Other/Misc	<b>Orga</b> nizations MIPR	_			20804 7793	1327	2049				24180
Government Furnished Property: None	ed Property:	None									
				Page	Page 4 of 7 Pages 1001	S			Exhibit R-3	53	Item 107
					1 1						

UNCLASSIFIED

RDT&E PROGRAM ELEMENT/PROJEC	IT/PROJECT COST BREAKDOWN (R-3)	REAKDO	WN (R-3		DATE F	February 1995	95
BUDGET ACTIVITY  5 - Engineering And Manufacturing Dyvelopment	PE NUMBER AND TITLE 0604820A Rad	AND TITLE	TITLE Radar Development	nent .			
6	Total						
	Prior to	FV 1994	FV 1995	FV 1996	FV 1997	Budget to	Total
Subtotal Product Development	65333	13383	3727	277	777	and the same	82443
Subtotal Support and Management	19881	1951	124				21956
Subtotal Test and Evaluation	28597	1327	2049				31973
Total Project	113811	16661	2800				136372
	, , , , , , , , , , , , , , , , , , ,					·	*
	Page 5 of 7 Pages	5.			Exhibit R-3	4-3	
	1002						Item 107

RDT&E BUDGET ITEM JUSTIFICATION SHEET ( 2 Exhibit)	M JUST	FICATI	ON SHE	ET 1,	Exhibit			DATE	February 1995	205
BUDGET ACTIVITY  5 - Engineering And Manufacturing Develor	Jevelopm	pment	PE NU 060	PE NUMBER AND TITLE 0604820A Rada	) TITLE Radar Development	/elopmer	<b>_</b>		9	PROJECT <b>D2IT</b>
COST (in Thousands)	FY 1994 Actual	FY 1995 Estimate	FY 1996 Estimate	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	Cost to Complete	Total Cost
D2IT FAAD C3I Oper Test	0	4951	0	0	0	0	0	0	0	+98+
C. Other Program Funding Summary Other Procurement, Army-2	EY 1994 7900	EY 1995 63855	EY 1996 44678	EY 1997 53282	FY 1998 46776	EY 1999 44438	FY 2000 64327	FY 2001 69010	To Compl continues	Total Cost
Spares BS 9732			2634	4040	5672	\$686				continues
D. Schedule Profile	FY 1994			FY 1995	•	FY 1996		•	r 199	
FAAD C31 Test Preparation FAAD C31 Oper Test Evaluation C31 Test Results Milestone III C31 DAB	9 •	r	· ×	~ ×	<b>.</b>	٧	n		°	4
			Page 6 of 7 Pages	Pages				Exhibit R-2	2	·

RDT&E PROGRAM ELEMENT/	SAM ELE	EMENT/PR	PROJECT COST BREAKDOWN (R-3)	OST BR	EAKDO	WN (R-3		DATE	February 1995	95
BUDGET ACTIVITY 5 - Engineering And Manufacturing Developi	acturing	Development	1	PE NUMBER AND TITLE 0604820A Rad	AND TITLE	זודנב Radar Development	nent		R O	PROJECT <b>D2IT</b>
A. Project Cost Breakdown Test Preparation Operational Test Test Evaluation SBIR/STTR Total			FY 1994	₹ Y	FY 1995 285 3752 810 104 4951	FY 1996	FY 1997			
B. Budget Acquisition History and Planning Information Performing Organizations Contractor or Contract Government Method/Type Award or Performi Performing or Funding Obligation Activ	Planning In Planning In Award or Obligation	<u>formation</u> Performing Activity	Project Office	Total Prior to					Budget to	Total
Vehicle velopment Organizations d Management Organizations	Date s: None ntions: None		EAC	FY 1994	FY 1994	FY 1995	FY 1996	FY 1997	Complete	Program
	Oct 94					4847				4847
SBIR/STTR Government Furnished Property: None	tone					104				104
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project						4951 4951				4951
			Page	Page 7 of 7 Pages				Exhibit R.3		
			1 MKE	caxn / / // /				LAIIDIL	2	

1004 UNCLASSIFIED

Item 107

